Amateur Radio

Volume 78
Number 10
October 2010
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100 YEARS 1910 ~ 2010 WIRELESS INSTITUTE OF AUSTRALIA

Celebrating the centenary of organised amateur radio in Australia

Tune-in to the world

Amateur radio gets people talking

WIA National Field Day
Saturday 23 October 2010

Taking amateur radio into the community

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Amateur Radio

Volume 78, Number 10

October 2010

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Cover Photo

Help promote our hobby to the broader public - set up a station and participate in the WIA National Field Day on 23 October, allowing the public to "Tune-in to the world". See the story on page 8.

Photo by Robert Broomhead VK3DN.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

Back Issues

Back issues are available directly from the WIA National Office (until stocks are exhausted), at $8.00 each (including postage within Australia) to members.

Photostat copies

If back issues are unavailable, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

100 YEARS 1910 ~ 2010 Wireless Institute of Australia

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A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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Editorial

Peter Freeman VK3PF

For many, October will be a very busy month.

Jamboree On The Air

Across the world, many amateurs will be involved in the Jamboree On The Air (JOTA) and Jamboree On The Internet (JOTI) event, involving youth who are members of the Scout or Guide movements. This is an excellent opportunity to expose younger people to our hobby.

As Bob VK6POP explains in his article, your plans should be well underway by now if you are directly involved with a Scout or Guide group for this event.

Locally, our club will be running JOTA on the Sunday, with the local Guide group. We will also have the bonus of using the special callsign VK100WIA, celebrating the centenary of organised amateur radio in Australia. We will be focussing primarily on JOTA contacts for the Sunday, but will work other stations if JOTA contacts are hard to find.

I am aware that the Victorian Scout Radio and Electronics Service Unit will be using the VK100WIA callsign over the period Thursday to Saturday, so Saturday (and Sunday morning in most states except WA) will be another opportunity for JOTA stations to work the special callsign.

Also note that another special callsign will be on air – VK100GG, celebrating a century of the Girl Guide movement. I understand that the callsign will only be in use for a short period, so I expect that many will be seeking contacts so that they can claim a rare QSL card.

Last chance to work VK100WIA

The end of October marks the end of the operations using the special event callsign VK100WIA. It also marks the end of the period for working that callsign and any WIA members if you hope to qualify for the WIA Centenary Award. The award applications must be submitted by the end of January 2011, but eligible contacts must have been made in the period 1 May to 31 October 2010, so you had best make that little extra effort now!

Make your plans for the WIA National Field Day

Do not forget that in addition to JOTA, there is another opportunity for you and/or your club to promote amateur radio to the broader community this month – the WIA National Field Day, with its theme "Tune-in to the world: Amateur radio gets people talking".

Full details were in *AR* last month, and this month our cover story highlights the event. Plan out what you can do. Consider purchasing some of the clothing available with the event logo – but be quick if you want the clothing for 23 October, as there is a two week delivery. If you decide to set up a station in a public place, consider having the promotional banner printed in colour. There are plenty of resources available, as outlined in the article and available for download from the WIA website.

Ballarat Hamvention

On the day after the WIA National Field Day, Sunday 24 October, the Ballarat Amateur Radio Group will be holding its annual Hamvention. This event draws visitors from far and wide, including most of western Victoria, Melbourne and suburbs and even South Australia. Due to its wide catchment area, it is an event that is worth attending, if only for the social aspects – it is a great place to catch up with friends that you have not seen for some time. I know that I am making plans to make the long trek from Churchill for this reason. Of course, you may also find something attractive for sale, or even win a prize in the raffle. Either outcome would be a huge bonus, really making the long trip a complete success.

Moving finally complete

Yes, I have finally completed moving everything from the old location. I need to start sorting the mess at the new location. Due to time pressures during the move, boxes were simply placed in a convenient spot on arrival. Now the big task is to make decisions about assembling a new shack, planning which antennas to erect in what order, refurbishing the Nally tower support pole, obtaining a building permit for the Nally and so on. It will eventually happen, but I am taking a considered and staged approach.

Cheers, Peter VK3PF

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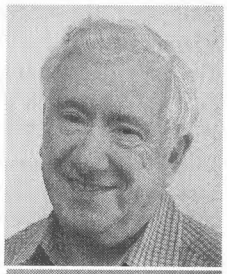
Amateur radio is worldwide— Australian amateurs need a voice in world forums

WIA comment



Michael Owen VK3KI

Where it all starts

At our recent face to face meeting, the directors discussed a new brochure to promote membership of the WIA.

The brochure listed all the obvious things, like this magazine Amateur Radio, QSLs, contests, and so on.

But we were also talking about the representative and advocacy role of the WIA.

We were talking about what reference should be made to the fact that the WIA participates in the IARU process and participates nationally in Australia in preparatory meetings for a WRC and may nominate a delegate on the Australian delegation for an ITU WRC.

I have always been very anxious to ensure that the WIA's role nationally and internationally and through the IARU to represent the amateur service at the ITU is highlighted.

At times, it has been suggested that such topics are all too complicated, and it really does not interest many people.

I know that one can very easily make it all very complicated, simply by trying to describe the process and procedure, and trying to describe it all in too much detail. I know because I have been guilty of doing exactly that.

But then one of the WIA directors pointed out why the ITU was so important.

Actually, it is a very simple proposition. It was also saying the obvious.

He suggested that in a reference to the ITU, where it said that it determines global radio regulations we should add the statement "and consequent Australian allocations for the amateurs."

Simply, it will not happen, whether it is good or bad, unless it happens first at the ITU.

So why do we make it so complicated?

I think it is because we are always trying to get across the message that the representation of the amateur services at this level is not just like dealing with ACMA. It is not just writing a careful letter, perhaps a phone call or two, even a meeting.

It is a whole process, over four years, culminating in a four week meeting in Geneva.

And it is made more obscure by a never ending use of abbreviations and acronyms, for example ITU, APT, CPM, ITU-R, RTO, SG, WG, WP, APG and of course WRC. Indeed, the IARU Administrative Council document, the Plan for the Development of Support for Amateur Radio Frequency Allocations 2007 – 2012, an internal document, has a full page and a half of abbreviations and acronyms.

The process starts at the national level, with the formulation of the Australian position.

Now that process includes the regional telecommunications organisations (the RTOs). In our case, the preparatory meetings (APG) of our regional organisation, the Asia-Pacific Telecommunity (the APT).

There has already been one APT meeting this year for WRC-12, in March this year in Bangkok, and there will be another this year, in December in Hong Kong. IARU Region 3 attended the Bangkok meeting and will attend the Hong Kong meeting.

In the other two ITU Regions, the IARU regional organisations represent the amateur service at the RTOs in their Region.

The IARU is a Sector Member of the Radiocommunications Sector and participates in the Study Groups and attends the WRC as an Observer.

The IARU attends many ITU meetings, some not directly related to WRC-12.

However, in the current year, 2010, the IARU has or will attend some eight or nine WP (Working Party) or SG (Study Group) meetings in Geneva, all directly related to WRC-12.

It is this now never ending series of meetings that represents the focus of the protection and advancement of the interests of amateurs that face national societies like the WIA.

Immediately a WRC ends, a CPM (Conference Preparatory Meeting) of the ITU-R (Radiocommunications Sector) is formed for the next WRC. Its task is to take the input from the various groups, summarise the technical and operational studies and other relevant material and to formulate the possible methods for satisfying each agenda item. The methods may vary from doing nothing to a number of different solutions.

All of this requires the commitment of people having particular skills, and experience. It involves funding travel and accommodation expenses, usually in very expensive cities.

So, if we are promoting the membership of the WIA why shouldn't we explain all of this?

We should, to those who are interested.

But that will not be everyone.

But every amateur should understand the very obvious.

What ultimately happens at the ITU, if it relates to a frequency band used by the amateur services or the regulation of the amateur services, will affect amateurs in Australia.

That is why the WIA asks for the support of every amateur, because what the WIA does affects every amateur. And the more amateurs who are members, the greater the credibility of the advocate.

But trying to say more than the simple, obvious proposition is, for some people, a step too far.

But be assured, behind that very simple statement is a process that is long, slow and tedious, all in a complicated structure, but is absolutely critical.

ar

WIAnews

Phil Wait Appointed WIA Vice-President

The WIA Board met at the WIA's Bayswater, Victoria, offices on the weekend of 4/5 September 2010.

Vice President Ewan Mcleod VK4ERM requested to be relieved of his duties as Vice-President because of the pressure of other commitments.

The Board accepted Ewan's resignation with regret, thanking him for his contribution. The directors were pleased he was able to continue as a director.

The Board appointed Phil Wait VK2ASD as Vice-President.

Phil, a director since the restructure of the WIA in May 2004, is well known as the joint author of the Foundation Licence Manual and for his valuable work for the WIA, particularly in relation to BPL and standards.

Darwin Venue for 2011 WIA AGM Weekend

At its recent meeting over 4/5 September 2010, the WIA Board considered the date and venue for the next AGM weekend.

Suggestions for a venue had been invited and a number of State Advisory Committees consulted.

From comments at different times, particularly from the Canberra Centenary event, it is obvious many people want the location to be interesting in itself, and not a capital city.

Many members had requested early advice as to date and venue, so that they can plan a break around the WIA weekend.

The Board took into account the requirement to give notice of the AGM in *Amateur Radio* magazine after the completion of the audit, as well as the dates of other activities, such as the Dayton Hamvention.

The weekend chosen was the 27-29 May 2011 and the venue Darwin.

The directors were much influenced by the proposal submitted by Peter Blackadder VK8HPB on behalf of the Darwin Amateur Radio Club. The club made its name in Region 3 as a result of the very well remembered IARU Region 3 Conference held in Darwin in 2000 and the legendary hospitality of the club and the Darwin amateurs.

Further details will be released as soon as possible.

To give the WIA an idea of the interest in this very different venue, if you are thinking of coming, please let the WIA Secretary Geoff Atkinson know, without any commitment, at secretary@wia.org.au

Pierce Healy VK2APQ celebrates his 99th birthday

The WIA extended its congratulations to Pierce Healy VK2APQ on his 99th birthday on 13 August 2010.

Pierce gained his amateur licence at the beginning of World War 2 but could not get on air at that time. In the 1950s he was a member of NSW Division Council and later President. Whilst President, Pierce prepared and read the VK2WI morning bulletin. He served many years as VK2 Federal Councillor. Pierce was particularly well known for his amateur radio notes that were published in Radio and Hobbies, the predecessor of Electronics Australia.

Pierce is a Life Member of the WIA and ARNSW. He is still a regular voice on the VK2WI Sunday callback.

A milestone for the WIA Centenary Award

Claims continue to arrive steadily for this limited edition operating award celebrating the Centenary of Organised Amateur Radio in Australia with more than 160 now issued.

The first from Hawaii is also the 100th award certificate, and it goes to Dan Greeson KH6P.

The first radio club to get the award is the Moorabbin and District Radio Club VK3APC.

Also receiving his award certificate is Franck Alcidi VK8FNCY of Palmerston in the Northern Territory. As a new radio amateur in May, Franck made his very first ever contact on air with VK100WIA. He joins ten other Foundation licensees qualifying for the WIA Centenary Award and their first amateur radio operating award.

Some of the award claims have included personal comments, many simply to congratulate the WIA on its Centenary and making the award available. Winston Henry VK7WH said, "I have held a licence since 1958 but have been QRT the past 30 years. The Centenary of the WIA was the catalyst to get back on the air and rejoin the WIA."

The special callsign VK100WIA will be on air until the end of October. Claims close on 30 January 2011.

Christchurch New Zealand Earthquake

A massive recovery operation followed after the 7.1 magnitude earthquake that hit Christchurch at 4.36 am on Saturday 4 September. The Amateur Radio Emergency Communications (AREC) members quickly established an on air net and observed the operational status of the repeater systems. Apart from at least one switching to emergency power, all was fine.

AREC Assistant National Director Geoff Chapman ZL3PX said designated emergency frequencies on the 80 m, 60 m and 40 m bands, plus 2 m band simplex were activated. The Christchurch AREC Communications Bus ZK9EAC and Comms Vehicle ZK9EAD operated on all those frequencies. They were deployed with the military for three days in the initial recovery phase of the disaster. AREC also provided communications for the volunteer clean-up teams.

International Space Station Contact with South Hobart Primary School

On Friday 27 August 2010, students from the South Hobart Primary School asked questions of US Astronaut Colonel Doug Wheelock as he flew over the Goddard Space Flight Centre in Maryland, USA. The contact was made via the telebridge network to the ISS (NA1SS) under the guidance of Coordinator Tony Hutchison VK5ZAI (Australian ARISS Coordinator) in Kingston SE South Australia.

The amateur radio ground station was K6DUE at Goddard Space Flight Centre in Maryland USA run by Dave Taylor W8AAS with Mark Steiner K3MS and Burnie Hahn N6ZOA.

EchoLink streaming was by Graham Lawton G7EVY in Lancashire UK.

The operator at the school was Justin Giles-Clark VK7TW. **ar**

A Review of CDs published by the WIA

The WIA has three CDs available featuring the history of the development of amateur radio in Australia, all worthy of a place in any amateur's shack!

The Sounds of Amateur Radio ~ Volume 1

In 1985, a group of amateurs produced a cassette tape featuring recordings of amateur radio activities collected over the years. The 75th Anniversary was the catalyst and material was sourced from acetate discs, plain aluminium discs, Recordon paper backed magnetic discs and the then common, ¼ inch magnetic tapes.

The resultant cassette recording *The Sounds of Amateur Radio~ Volume 1* featured the voices of many early, amateur experimenters talking of their experiences from pre World War 1, through the early days of short wave communications and included actual off-air recordings of amateurs operating on the broadcast band. Australia was one of the few countries which permitted selected amateur experimenters to operate on the broadcast band when the commercial stations had closed down at night. These unique recordings provide us with a glimpse of a period long past.

The tape included Alan Fairhall VK2KB, the then Minister for Defence, speaking of the worth of amateur radio to the Australian Nation in 1967 and also refers to emergency communications associated with the Ash Wednesday bushfires in 1983.

The Sounds of Amateur Radio ~ Volume 1 has now been transferred to CD after re-mastering. It has an additional section by two original producers, VK3AML and VK3RV, in which they talk of the archival activities and challenges surrounding the gathering of the original material from unusual sources – a similar exercise which many have to face in recovering important data from early media. Where are the working machines which can handle this?

This is a fascinating CD witnessed by the use of sections of it by the ABC, Radio Australia, Commercial and Community radio broadcasts over the years since it was originally produced, but largely forgotten for the past 15 years or so.

The Sounds of Amateur Radio ~ Volume 2

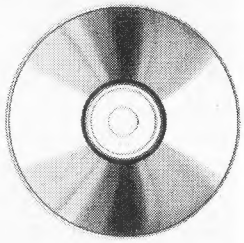
Volume 2 is a 100th Anniversary project and involved much 'detective work' to identify many un-labelled tapes held by the Institute. Like Volume 1, it starts with the earliest days of 'wireless' communications in this country.

Featured speakers include: Bill Jenvey OA3AY talking about his father Walter Jenvey's experiments at the turn of last century; and Walter Hannam (later VK2AXH), the first secretary of the Institute of Wireless Telegraphy (NSW, 1910), explaining his early involvement with the Institute and the lead up to his trip to the Antarctic with Mawson's 1911 Expedition.

Other speakers include Dr. Alan Butement (G)2TM, VK3AD, (one-time Chief Scientist for the Commonwealth of Australia) who talks of early experiences in England working New Zealand and his involvement in the development of early radar and its first demonstration to Winston Churchill.

'Snow' Campbell VK3MR was a WWII prisoner. He talks of his experiences in the POW camps and the part that radio played in them. A fascinating and at times humorous account! Part of the 1956 Yasme DXpedition is related by Danny Weil, particularly his near disaster off Port Moresby. Yasme was the name of the boat which Danny sailed the world and after which the Yasme Foundation is named. Early television experiments are related by Alan Butement (who talks about J.L.Baird), Len Moncur and Geoff Hughes. Australis-Oscar 5 was an amateur satellite designed in Australia and launched from America in 1970. The period immediately following the launch was covered by a broadcast over AX3WI which involved a number of well known amateurs including Dr. Deane Blackman VK3TX who later appeared on television programmes talking about amateur radio and space age communications.

This CD contains much more: including Sir Richard Williams (of RAAF and Civil Aviation fame) talking about his early involvement with amateurs at the time of the First World War and in 1929, with the WIA initiated RAAF Wireless Reserve. WIA Federal President, Maxwell Hull VK3ZS explains how the use of the spectrum changed dramatically after WWII, resulting in pressures on our bands and the need for amateur radio to be represented at the 1959 Geneva Conference at which John Moyle, editor of Radio and Hobbies magazine, and a WIA member, became our first international representative. There is an amusing story about wireless being used to stimulate rainfall. Radio can be used for almost anything! Can't it?



Both CDs are narrated by Warren Moulton VK3LX who worked in radio broadcasting including Radio Australia for many years.

Amateur Radio magazines, 1933 to 1939

Amateur Radio magazine was first published in 1933 at a time when amateurs were still very much 'back-yard experimenters'. Two years ago, Will McGhie VK6UU scanned all *AR* issues from October 1933 to December 1939. The magazine was then half the size of today's and is now available as PDF files on CD. Will has done an excellent job of scanning the magazines and has ensured that high quality images of the early issues have been preserved for posterity. Let's hope that someone else will pick up from where Will. left off and volunteer to scan later issues of our magazine.

These CDs are available from the National Office at a member's price of $20 each (plus postage). They would be an excellent Christmas gift for any amateur with an interest in the history of amateur radio or the history of radio development in Australia.

Further information is available on the WIA website: www.wia.org.au Click onto the Members Area tab on the front page and then go to WIA Bookshop and select WIA Publications. **ar**

Saucepan lids, woks and dishes

(What's Cooking on 47 GHz?)

Dan Joyce VK2GG

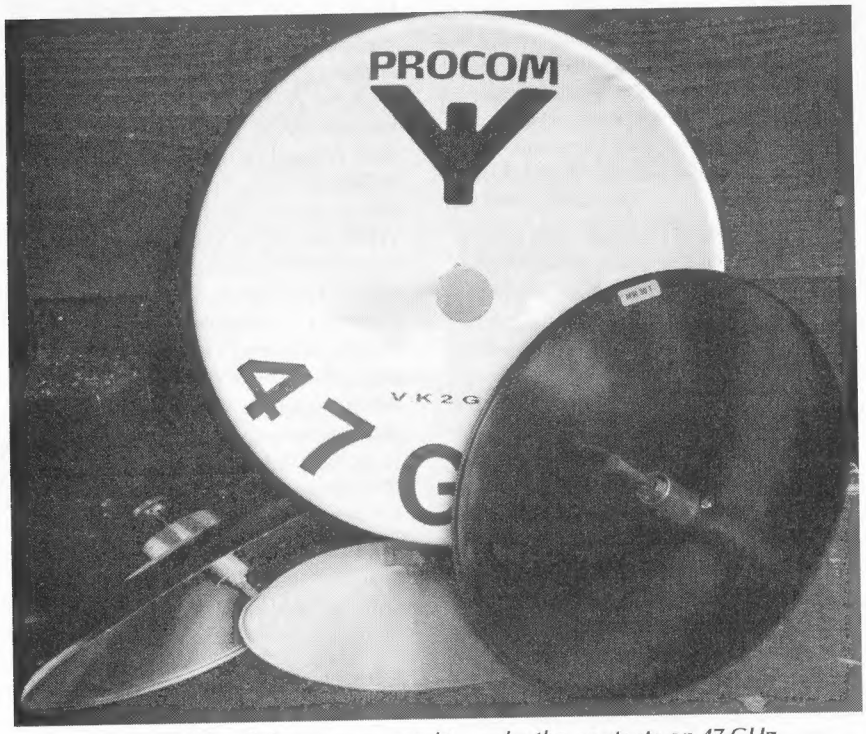


Photo 1: The dish antennas used to make the contacts on 47 GHz.

Photo 2: Dan VK2GG at Gan Gan.

Every microwave enthusiast has heard the ribbing before: "What are you going to cook on that wok?" Or, "Does your wife know you have her saucepan lid?"

Well, we really DO have a sort-of-parabolic saucepan lid as a dish for 47 GHz. It started out as a pan which Les VK2APE had in his bits-and-pieces. I then began modding it to take the penny feed, but botched it a little. Pete, VK2YGM then took it over, and managed to finish the mounting of the feed at the optical focal length; it actually looks pretty good, as you will see in the photos.

It performs every bit as well as the very snazzy looking Procom dish, and together with some quite exclusive gear from Kuhne in Germany, and a bit of planning, and some good luck with the weather, we achieved a national record for 47 GHz.

Now 47 GHz has some unique properties; it is quite severely affected by path losses due to the atmosphere. Forget rain, as it is out of the question! High humidity, or even high oxygen concentrations attenuate the signal.

The International Microwave Handbook suggests that atmospheric path losses might be in the order of 180 dB for a 60 km path. Fortunately for us, the Kuhne receivers are quite sensitive, and the dish gain is in the region of 36 dB; thus our modest 0.15 mW seems to go the distance. Just how much distance?

We felt that our 58 km on a late winter's day of moderate temperature and low humidity was probably pushing close to the edge of the envelope! Next time we may select a cooler day closer to the middle of winter to achieve 60 – 80 km; we will see!

Our equipment consisted of a pair of Kuhne Transverters with 0.15 mW output, Kuhne local oscillators

and approximately 36 dB dishes. IF was provided by a Yaesu FT-817 at each end. The path was an elevated one, from Mt Sugarloaf with which local Newcastle amateurs are quite familiar, as it hosts six repeaters on 2 m and 70 cm, to Gan Gan Lookout in Port Stephens.

Both sites have multiple commercial installations, and may be regarded as "RF sewers", so that 2 m liaison was difficult. The path length was 58 km line-of-sight, with elevation at 345 m and 154 m.

The contact was difficult, because direct visibility was impossible due to haze. After lining up the dishes using compass bearings we finally began hearing each other, thanks to our "Freakin' Beacons". Beamwidth is only about 1.5 degrees!

Although locked to 10 MHz Rubidium oscillator sources, there was very annoying transceiver drift on CW and SSB, obviously due to the FT-817s drifting. There was also rapid fading in the path propagation!

We wished we had picked a colder day; the temperature was 24 degrees C with 51% relative humidity. Pete has a "sling psychrometer" for measuring humidity, (which Jack VK2TRF was supposed to put on video!)

Successful two way SSB was achieved, with some improvement in conditions after about 40 minutes. Later, we found that the RH at Williamtown had fallen from 50% at midday to about 40% at 3pm.

We had been lucky! Come on guys! Get some 47 GHz gear working: it is lonely up here!

Thanks to Peter VK2YGM, Irene VK2FIRH, Jack VK2TRF, Les VK2APE and Heather.

References:

Freakin Beacon: http://www.expandedspectrumsystems.com/prod5.html

Kuhne: www.kuhne-electronic.de/en

International Microwave Handbook. Barker A, G8ATD (Ed) RSGB & ARRL, London 2002.

Procom: http://www.procom.dk/eng/Page_menu/Products/Microwave_Antennas/47_GHz

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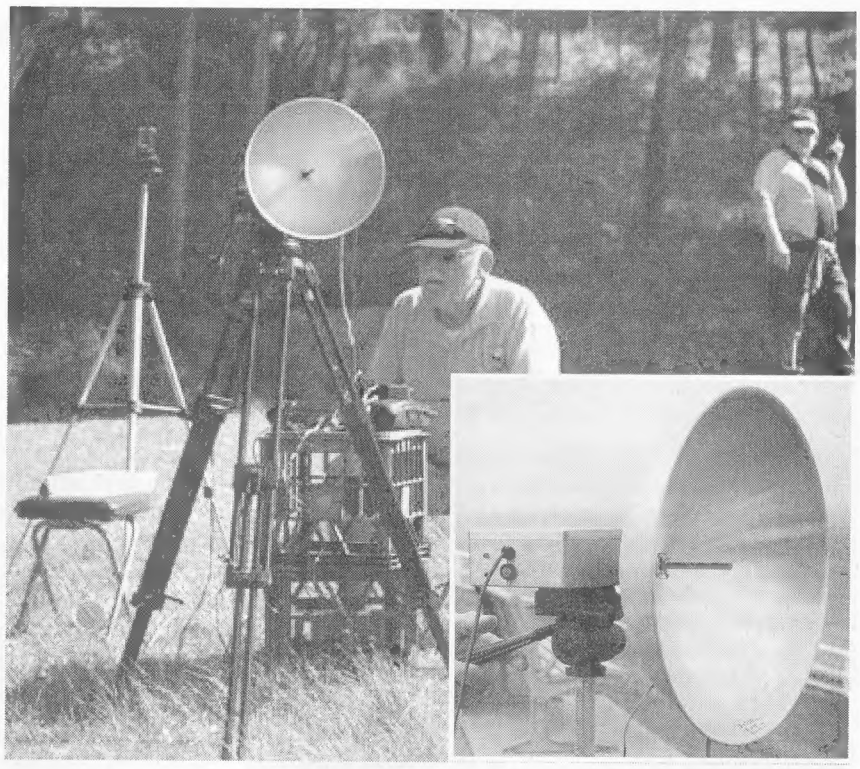


Photo 3: Peter VK2YGM with the wok lid at Mt Sugarloaf. Inset: THE LID

Photo 4: The view from Gan Gan along the path.

Cover story: Tune-in to the world

Our inaugural national day of amateur radio promotion

Jim Linton VK3PC

Tune-in To The World - amateur radio gets people talking;

The WIA National Field Day on Saturday 23 October is a bold new outreach initiative to show the public the educational, recreational and social aspects of an activity now enjoyed by three million people worldwide.

This comes after some 12 months of discussion and planning involving a handful of radio amateurs, all deeply dedicated and already active in growing amateur radio. Check out the event rules and scoring available on the WIA website and you will see the amount of thought that has been put into it.

Amateur radio has undoubtedly kept up with technology, all the while preserving its heritage, traditions and culture. As few other activities can, amateur radio truly offers a great opportunity for anyone wanting to learn and to do new things for pure personal achievement.

In Australia, at least until this centenary year, few people were conscious of amateur radio. Even now, most do not know that it exists and some have an outdated view of it. Others believe it was killed by the internet, the mobile phone, and indeed the convergence of these two which has put amazing communication capabilities within easy reach.

The licence restructure in 2005 did two main things. It reviewed the level of theoretical knowledge required for the then Unrestricted and Limited licences (now Advanced), and also middle level Novice and Novice-Limited licences (now the Standard Licence). It also reduced the number of licence types following the end of the mandatory Morse code tests.

At the same time, the regulatory control for amateur stations in Australia was streamlined and the information that had to be studied to get a licence further reduced, in line with international practice.

The Foundation licence became the new entry point for those wanting to take up amateur radio. The primary aim behind these somewhat overdue changes was to make amateur radio much more attractive and more accessable to a wider range of people.

These changes have achieved their intent reasonably well in the past five years but, without a concerted public relations effort involving many radio amateurs, we are only just scratching the surface of potential recruitment into the hobby.

Runs already on the board for Publicity

The WIA Centenary celebration, especially the roster of clubs using the special callsign VK100WIA, has shown how adopting a professional marketing approach can result in good media exposure and other publicity for amateur radio.

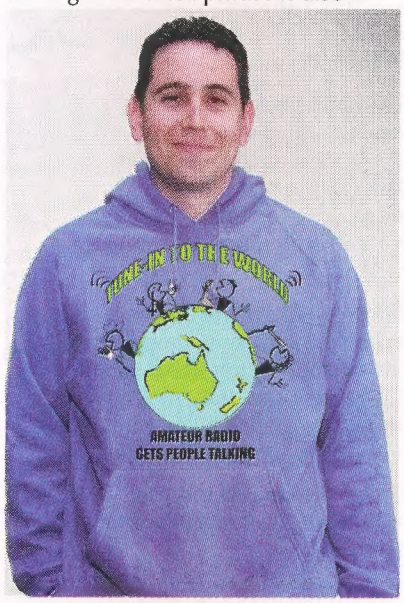
Participating clubs regularly report that they have attracted new candidates to their Foundation Licence training sessions through this focussed publicity.

Now there is an opportunity to build on that with radio clubs, or even a group of say three like-minded radio amateurs mounting a portable station and display in a high pedestrian traffic area.

In the past such activities were ad hoc, often lacking in structure, quality posters and hand-out information. The WIA will make available the WIA's Centenary poster, Calling CQ posters and Calling CQ brochures to clubs and groups registered for the National Field Day. If you and/or your club intend to participate in the Field Day, do not leave it to the last minute!

The centre-piece of the display material is a simple, distinctive logo which gives a powerful 'brand recognition' message. The logo appears throughout professionally designed 'plug and print' artwork for a banner and A-frame. The files for these 'point-of-sale' displays can be downloaded onto a USB stick from the WIA website and taken to Officeworks where the display can be created. (see box opposite)

A clothing range branded with the logo and catch phrase is also



obtainable. There are hoodies, T-shirts and Polos, all in blue, available in sizes Small, Medium, Large, XL, 2XL and 3XL. These may be purchased through the WIA website. Allow two weeks for delivery.

Also available is a sample media release that can be easily adapted by any radio club or group to publicise their participation in *Tune-in to the world - amateur radio gets people talking*, the WIA National Field Day.

Challenges to be met

On Saturday 23 October, radio amateurs will set up in public places, parks, shopping centres, halls, markets or festivals. Most will need to seek permission to do so and, when required, have appropriate public liability insurance.

The display will demonstrate the usefulness of amateur radio and its preparedness for its role in emergencies. Displays may also incorporate renewable energy such as solar or wind power generation.

Make the portable station look neat and tidy, pay attention to cabling, guys, and any trip or other perceived hazards. Position the equipment so that it is easily seen and visitors can instantly see what is happening.

This is a great opportunity to showcase our hobby and its capabilities to the public. Encourage visitors at every opportunity to give it a 'hands-on-mike' try.

Critical to over-all success is to have at least one radio amateur on site to greet and talk to visitors, engaging them in what it's all about, rather than allowing them to just look and walk off.

Certainly have fun and enjoy your hobby, but do remember that on this occasion it is all about promoting amateur radio. Think of the information needs of visitors to the display, speak with them in plain language, rather than jargon and acronyms.

Ask questions, and from their replies. build on their existing interests or activities, so reinforcing that amateur radio is something they could easily enjoy doing. **ar**

Three suggested display options

Printer-ready artwork can be downloaded from the WIA website, copy it to a memory stick and take it to your local *Officeworks* to economically print a banner, or other signage.

There are three PDF files for each of three different types of sign styles.

Option 1

This is a highly visible, self-standing, portrait aspect display banner called an "Xbanner".

Pictured right, it is 1800 mm high and 800 mm wide, the price from *Officeworks* is $97, which includes the cost of the banner, the stand and the printing.

You will need the file called X-Banner-artwork.pdf

Option 2

A slightly more expensive self-standing, A-frame display board (below right) is much better suited for outdoor use or in high wind or high traffic areas. It is double-sided and is available from *Officeworks* for $194 (both the product and printing cost).

You will need to download the file called A-Frame-artwork.pdf

Option 3

The least costly display is a A0 or A1 poster printed by *Officeworks* and suitable for pinning up on a wall or similar.

The A1 poster (594x841 mm) on plain 160gsm paper is $19 or a better quality, more durable 200gsm gloss paper is $26.

For a larger A0 poster (841x1189 mm), *Officeworks* print on plain paper for $28 or on gloss paper for $36.

If you choose either the A0 or A1 posters, please download the file called Poster-artwork.pdf

Foundation Corner 12:
Tackling the next level

Preparing for an exam is always a bit stressful and success requires some effective study and the desire to pass. In your upgrade to Standard or Advanced, in Theory or Regulations, you will have to demonstrate that you have really learned some of what it is all about. If you are like many others, it may be many years since you last sat a serious exam, so you will need to learn how it is done, all over again.

At the outset I would like to put down two misunderstandings. The first is: "All I have to do is pass the exam, I will never need to know this again." Oh so wrong. Even if you are only going to be a black box operator, you will need this when you least expect it, and have nobody around to ask.

The second is: "I will just study the sample questions. I can remember enough answers to get me through." Wrong again! You will be extremely lucky if you do pass. The only thing that you can be sure of is that the questions will come from the syllabus. There is no assurance that you will see any of the sample questions in your exam paper.

Now that you know that you are going to have to 'work' to pass your upgrade, I will try to make it much easier.

A lot of people only think of preparing for an examination, as the study that you do to learn the subject matter. They could not be more wrong. Preparing for an exam involves both physical and mental preparation. It is a bit like professional sport. The team coach may be able to train his team to play well together but it is not until the mental preparation and tactics come together that it becomes a winning team. Let us have a look.

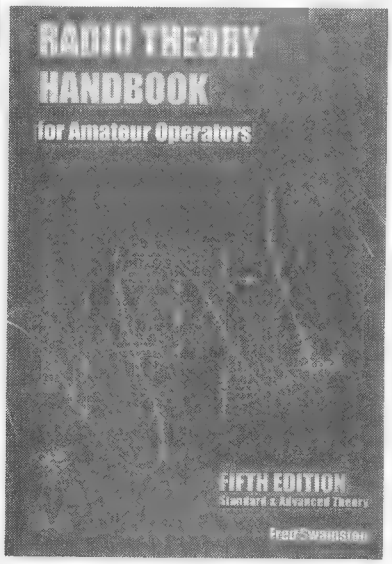
In many years of instructing various subjects, I have observed one consistent fact in examinations and how students pass or fail. I believe that you often get the answer to a question wrong, not because you do not know the answer; but you choose the wrong answer because you failed to understand what the question is asking. In my last two years of amateur exam debriefs, more than 80% of wrong answers were because of this failure to understand the question.

There is no single method that can be used effectively to deal with all types of questions in these multi choice examination papers. It is the "type" of question that determines "how" the question should be answered and it is never as simple as remembering which answer goes with which question. When I refer to the "type" of question, I am pointing to "what" it is that you are required to do in order to provide an answer that will resolve what is being asked. There are many "whats" but questions for amateur radio can usually be broken down into one of the following categories:

- Calculate a direct answer.
- Do other calculations, so that you can calculate the final answer.
- To recall facts, values, definitions and terminology.
- To recall and apply proportional unit values, mega, kilo, micro, nano, etc.
- To recall operation of basic circuit units.
- To recall theory principles of, say, propagation or antennas.
- To complete a statement that something is, or does.
- To complete a statement that something is not, or does not.

With this information stored away, you are ready for assessment day. My suggestions do not offer any guarantee that you will pass but I do guarantee that if you take this approach, you will have a much better chance of passing.

Preparation for an exam does not end the week or day before the exam. Your



Radio Theory Handbook for Radio Amateurs

The 5th Edition of this valuable reference for radio amateurs is now available. This reference has been updated and includes a comprehensive cross reference to the ACMA Standard and Advanced syllabus.

The 5th edition also has a CD tutorial with over 100 theory questions, referenced to the 5th edition to where the topic is covered. A commentary on the CD relating to each question is provided and will greatly assist those studying for the Standard or Advanced examination.

The book, including the theory tutorial CD, is available from:
Silverdale Publications, 248 Johnston Street, Abbotsford
Phone (03) 59629421 - Fax (03) 59629180 - email silverdale@silvertrain.com.au

The book, including the CD, is also available from:
WIA Bookshop (Member discount applies) - Phone (03) 97290400

A similar tutorial CD is available for preparing candidates for the regulations examination. This includes questions and references to the regulations origin documents for each question. The regulations CD is $20.00 plus postage.

preparation only ends when you arrive on exam day, assemble your resources and are ready to go.

When you open your exam pack, you place your calculator on top of your formula sheet, ready to be used!

Think briefly about this. I have an allotted amount of time. It seems like a lot but this much is allotted because it takes that long to:

Read the question.

Digest it.

Decide on how to find the answer.

Prove (calculate) or choose an answer.

Move on to the next and remember that each question may need a new method.

When given the OK to start you remind yourself of this:

For every question I must ask myself; what is the question?

How do I go about getting the answer?

Now go and get the answer.

The type of question determines "how" the question should be answered. There are many methods that will work to some extent but in most cases, taking the time to identify the type of question and knowing "how" to answer, makes a huge difference.

The easiest of all is the simple question where you are given two or more facts, and are required to calculate an answer. All you need to do is identify the answer that is required and do the calculation. In the more complex calculations, the formula sheet provides the formula.

If you are faced with a question about the operation or function or stage in a transmitter or receiver, if you clearly understand the question, you may already have the answer. Here is a method that works 99% of the time. (Always allow for the X factor.)

Take for example a question about a balanced modulator and an input or output. One way to find the answer is to gather what you know about a balanced modulator and see if the answer is there.

Example: 'A balanced modulator has two inputs. RF carrier signal from the carrier oscillator, which may also be the BFO in the receiver, and the audio signal from the microphone amplifier. The main function of the balanced modulator is to suppress the carrier and produce two sidebands. The output of the balanced modulator is upper and lower sideband plus very low level carrier.' In an examination it would be much quicker to draw a block and jot down key words for input, output, and so on.

You will find at times that initially the question does not appear to have any logic. If this happens it is almost certain that you have not read the question correctly. These are usually the "is" or "is not" type of questions. With this type of question, I have found that the most effective method is to read the question and each of the answers, in turn. Sometimes it is quite clear which answers do not fit but usually one, plus a fact or two that you can recall about the subject, will stand out as correct.

I do not intend to describe every one of the question types. With a bit of practice this will become clear to you. You might even be able to skim through and tag questions with the method that you will use.

When about half time or half way through, pen down for a moment and take stock. Unwind a little and see how you are going. Reassure yourself that half way at half time with only a couple of questions tucked away, is not bad.

Start again

When you have finished the last question, including those two that you tucked away, check your answers, and ask yourself, "is this my best answer?" If it is, leave it alone. If you have doubts and feel stumped, try another method for that question, or ask is there any way that I can work this out. Do not leave any question unanswered. Even if you have no idea, you have a 25% chance of being correct.

Then comes the assessment, and I do hope you have done well. If you have passed easily, with only a few wrong, you are still entitled to ask your assessor to explain the correct answer as on the template. You may see that question again in your next upgrade. If you have not made it to the magic 70%, please listen carefully to the assessor's explanation. If you still do not understand ask for his advice on where to look it up.

Good luck with your efforts. Listen carefully to our amateur shorthand and ask lots of questions. If you are not getting answers that you understand you can even drop me an email at vk2ara@wia.org.au

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The Amateur Wireless Society of Victoria

An 'archealogical dig' into amateur radio in Victoria

Doug Blackman VK3TX

My uncle, H. H. Blackman (Bert), born in 1887, was active as an amateur from the earliest days of wireless in Australia. I recall my father, 15 years his junior, describing how he as a boy watched his brother erect a large mast at the family house in Osborne Avenue, East Malvern, then the outskirts of Melbourne, to be used with his spark transmitter.

During the Great War he served as a signaller, training with the Rollestone Company in Wiltshire, England in the spring of 1917, and saw service in France. After the war, while continuing for a time with amateur activity (using eventually, by parental hearsay, the call sign VK3PR), he worked for the (then) General Post Office (GPO) in telephones, chiefly at the Windsor exchange, and was there when the manual exchange was converted to the new "automatic" system; I think Windsor exchange was the first in Melbourne to be so equipped. For my parents, after they married in 1926, he made a 3-valve battery-powered receiver. It was housed in a beautiful mahogany "coffin" case with embossed panels, and I suspect was for listening to the cricket tests in England. With his wife, he lived out his life in Closter Avenue, Ashburton.

When he died, around 1970, I went over the residue of his workshop. It had a lathe and other machine tools, all dated and sadly lacking use. There remained only fragments of his radio equipment. I recovered the brass bar and pivot of a Morse key which he had made for himself; I added a knob, base, contacts and terminals to make a key which I still use.

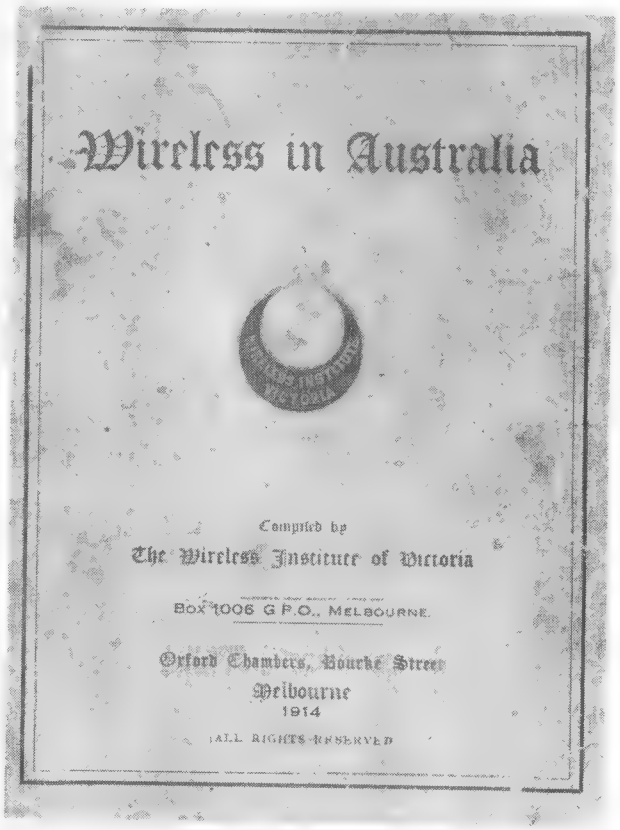
The shack was almost knee-deep in paper; for years he had just thrown magazines and other stuff in as he finished with it. I decided to go through this. It was like an archaeological dig: the deeper I went the older the material. And then I struck gold in the form of a small book, published by the "Wireless Institute of Victoria" in 1914, entitled "Wireless in Australia". It is a soft-covered book of about 30 pages and measures 120 mm × 160 mm; it is what we now know as a call-book. Its preface claims it to be the first of its kind for Australia. It is probably the first in the world.

"Wireless in Australia" lists about 25 'commercial' Land Stations, in fact the coast stations VIM, VIS and so on of fond memory. And it lists about 300 'commercial' Ship Stations; these are all three-letter calls, ante-dating the more familiar four-letter ones long since used for ships. This list includes: DSA (Scharnhorst) and DGU (Gneisenau), German naval cruisers about to be sunk (December 1914) by the British at the Battle of the Falkland Islands; and VKD (HMAS Sydney), soon to achieve fame by sinking the German cruiser Emden after an alert radio operator at the Cocos Islands land station penetrated her disguise and alerted the Navy.

There are about 400 experimenter stations (as amateur stations were then called) listed. As a portent of the amateur future, the three-letter calls in New South Wales run from XAA to XIZ, with four-letter calls beginning XA, and in Victoria XJA to XPZ with four-letter XJ calls. Queenslanders were XQ, South Australians XV, Western Australians XY and Tasmanians XZ; there are only about 50 of these latter calls. The 'X' is for 'experimenter'.

In Victoria, as well as XOE (HH Blackman) I noticed these: XPJ (Wireless Institute of Victoria); XJDY (LA Adamson) who was the formidable headmaster of Wesley College at this time; XJAD (CJ Brown) who gives his address as Melbourne Grammar School, was a science master who taught there from 1904 until 1948. They were not all urbanites: XJED (H MacKinolty) was at Korumburra – before soldier settlement put a sprinkling of farmers on the Strezleckis it must have been isolated down there; and XJDV (TA Crerar) at Hexham – there is not a lot there even now.

In NSW, XADK was the Wireless Institute of New South Wales, and enterprising was XACI, Rev Fr. O'Reilly in Bathurst. One name I do know, XIQ (EG Lampard): his son DG Lampard was the foundation professor in Electrical Engineering at Monash University, and has named after him the capacitor which he discovered which can be used as a calibration standard. A helpful couple of pages list not only the International Morse Code and quite a few prosigns, but a page of familiar Q-codes, only recently (1912) approved by the


Wireless in Australia

Compiled by
The Wireless Institute of Victoria

Box 1006 G.P.O., Melbourne.

Oxford Chambers, Bourke Street
Melbourne
1914

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(then) International Radiotelegraph Convention, (now) ITU.

To offset the costs, Marconi-Telefunken (an unlikely collaboration) were advertising courses for certification, Warburton-Franki were offering a range of radio equipment, and Lawrence and Hanson were offering accumulators which were 'practically indestructable' as well as other electrical hardware. Familiar names all. The Victorians had a proposal form for membership included, and the Wireless Institute of New South Wales invited you to apply for one at Box 2, King Street Post Office, Sydney. A delicious find.

But there was more to come. At the next layer, at ground level, was a moist, water-stained exercise book, which was the hand-written minutes of meetings of the Amateur Wireless Society of Victoria. I had struck oil!

The record begins with the inaugural meeting, which followed a newspaper notice (a copy of which was pasted into the minutes) headlined "Wireless Telegraphy Society", held at the Esperanto Hall (the Hall was at 157 Elizabeth Street, and "Esperanto" was one of a number of 'universal' languages being promoted around this time) on 30 November 1911. The meeting agreed on a name for the society, and appointed officers and a committee of six. The annual subscription was set at five shillings.

They moved quickly. The committee met a week later and drafted the Rules and Regulations which were approved at a General Meeting a week after that. Six days later, on 19 December, the committee met to approve a 'crest' for the new society – a pair of headphones circling a spark gap – and a printer's block of it was ordered. There is a note of the first technical meeting on 1 February 1912, when there was a lecture on "Induction Coils", and a paper entitled "A train stopped by Wireless" was read. One cannot but be curious about the content of the latter.

The Society met monthly at a variety of venues, including the homes of members, but the base camp became "Oxford Chambers", 473 Bourke Street, where the Society had rooms. Initially on the second, then ultimately on the sixth floor where its station was established with facilities for assisting members with technical problems. Finances were tight, and attendance falling, until the December meeting when as "... the result of a broadcast" about 100 folk turned up and heard a(nother) lecture on Induction Coils. They were, after all, the PA of the spark days. For the Melbourne of 1912 that was a lot of people.

In 1913 the committee met on 31 January and resolved to duplicate and sell a list of licensed amateurs drawn up by a Mr. Long. The proceeds to be used to acquire instruments for use by the members. The lists sold well at the next general meeting on 3 February.

The March lecture was from a GPO man on telegraphy; the April lecture was on "radium" (complete with a sample thereof!), but the business of the meeting was approving a deputation to wait upon the GPO, who were taking a heavy-handed approach to experimenters who 'clashed' with government stations. Given the difficulty of maintaining, let alone determining, frequency (they always spoke in terms of 'waves' in those days) this comes as no surprise. The deputation further complained that the government stations, when they became aware of a problem, in advising the offending amateur transmitted at speeds well in excess of the 12 wpm which is all that experimenters were required to master. It is interesting, in the minuted report on these discussions, that the deputation is described as representing "the institute".

And, indeed, at the meeting on 1 May 1913, the name of the organisation was changed to "Wireless Institute of Victoria". The minutes of this meeting refer to the "Wireless Institute of New South Wales" in relation to an upgraded list of amateurs (doubtless the forthcoming call book of 1914, mentioned above). The lecture was given by HW Jenvey, who is certainly the man for whom a cairn exists at Queenscliff as being responsible for the first ship-to-shore communication in Australia.

In July it was noted that all amateur operation in New Zealand had been stopped. The August meeting was held at the Engineering School, University of Melbourne, by favour of MW Kernot, the foundation professor of engineering at Melbourne University. The present sloping bridge across the Yarra at the eastern end of Victoria Street, Richmond, is his work, and he has lasting fame for pioneer work concerning wind loads on engineering structures, then very arcane but now a significant main-stream technical area. Kernot gave the lecture this night on "Discharges in Air and Vacuum", complete with demonstrations. More ominously, it was noted that the GPO was contemplating withdrawing all experimenter licences on account of interference.

The October meeting, as well as hearing a lecture on "hot-wire ammeters" (doubtless early models of a device which measures average power by assessing the heat liberated by the passage of the fluctuating current), approved a new 'crest' described as: "... of distinctive appearance with a streak of lightning flashing through a cut-out section of the medal", and which would seem to be the progenitor of the present WIA emblem. By November, new arrangements with Oxford Chambers had been negotiated, including the erection of aerials (200 ft (61 m) of 14 gauge copper wire). The meeting approved subscription to the journal "Wireless World", a publication which was to enjoy a very long life.

The notice of meeting for 14 June 1914 advised that the call book, was now available at a cost of two shillings – 40% of the annual subscription. The last entry in the book is a copy of a notice of a forthcoming meeting for 9 March 1915 to be held at the "Oxford Chambers"; the lecture for the evening, to be given by one H Blackman, was on the subject of "Telephony" – advanced stuff for the time. Why he took the minute book home with him after his lecture, and why its return was never demanded by the Institute, will remain a mystery.

The original documents are now held by the Australian Academy of Science in Canberra, who supplied me and the Victorian Division (as it then was) with photocopies. More recently, I have scanned my copies digitally, and copies are held at the WIA office. The figure in this article is taken from those scans. There are about 100 pages in the minute book. It would be a useful, but a very significant task, to study the whole book and deliver a clean transcript. A machine readable copy of the call book is posted on the web site of the Radio Amateurs Old Timers Club (www.raotc.org.au); click on "Early Call Book".

This article is a revision of one which first appeared in Old Timers' News in 2006.

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Here & There – 'Oscar's Amateur Radio Adventure'

Rob Norman VK5SW

It was a moonlit night.

The air was still and quiet except for the sound of distant traffic while the backyard of the house was bathed in an eerie glow on that balmy summer's night. Not a mouse stirred. Not a tree leaf moved. The atmosphere was dead calm but there was indeed something happening here. In the corner of the yard and next to a tall tree there stood a small tin shed lit up by the glow of the moonlight. A dim light could be seen in the window.

In that shed, someone was speaking. Not to just anyone but to someone on the other side of the world. It was Oscar speaking into a microphone, talking to his friend in England. Oscar was 17 years old. He was an amateur radio operator and each Friday night using his radio, he talked to Peter who lived in the countryside on a small farm about a hundred kilometres from London. The weather there was the opposite to what it was like where Oscar lived in Adelaide, Australia. It was blowing a gale and cold as ice as Peter explained that winter had brought the snow which was lying on the ground and parts of the country were now under water. By contrast, the weather in Adelaide had been hot and dry with day time temperatures nearing 40 degrees Celsius. Global warming was a fact of life nowadays with extremes of weather now more prevalent than a few years before.

'It's freezing here. I'm just about sitting on top of the electric radiator as we speak,' Peter said, his voice travelling half way around the world to reach Oscar's ears, interrupted now and again by the crackle of static. 'It won't be long and I won't be able to get to work anymore because we'll be snowed in. I'll have to stay home with nothing to do but get on the radio, I can see that!' he chuckled. Any excuse to be on the radio was a good excuse to Peter.

He was a couple of years older than Oscar and lived with his parents who ran a herd of milking cows on their property. Peter worked in the nearby town as an apprentice electrician. 'The antenna's taking a battering in this wind, it's blowing a gale here. I just hope it doesn't break!' he said. It was about midday there while in the land down under, it was night time. Oscar was sitting in his small ham shack in the back yard of this parents' home with headphones on his ears listening intently to what Peter was saying. 'The weather conditions are just too rough to go anywhere today,' Peter said ' but I'd better get going Oscar, there are a few things I have to do here so won't keep it any longer. I'll see you next Friday, same time, same place. 73 for now.' Peter signed off and Oscar likewise.

Perspiration was beading on Oscar's forehead while the odd mosquito buzzed around the desk lamp. Even though it was night time the temperature was still in the high 20's.

The cover of 'Oscar's Amateur Radio Adventure', a short adventure book by Robert Norman VK5SW.

He took off the headphones, pressed the power switch on the radio, turned off the light and locked up his ham shack. Yawning, he slowly started to make his way back up the garden path towards the house at the front of the property.

Note

Details of my new book 'Oscar's Amateur Radio Adventure' can be found on my website www.vk5sw.com

The above short story, though, is not an excerpt from it. Rob Norman VK5SW.

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VK5news

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

The August meeting was a discussion meeting. The club looked at itself and at the future of both the club and amateur radio and how our club can combine these two ideas. The discussion was led by John VK5BJE.

He led us through the SWOT process. We looked at our Strengths, our Weaknesses, the Opportunities facing us and the Threats to us and our hobby as we look into the future.

The whole evening was interesting and thought provoking. The committee will take the results of the discussion and hope to come up with some ways in which our club, the largest in South Australia, can advance into the future.

These ideas will then be presented to the members and their assistance in making them into practical propositions will be sought.

The rest of the evening was devoted to information about the forthcoming Technical Symposium, to be held on Sunday September 19th, and our annual Buy and Sell on Sunday 7 November.

The Symposium will be held at the Belair Community Hall and the Buy and Sell at the Goodwood Community Centre.

Please come along to both these activities, and remember that if you are in Adelaide on the third Thursday of the month, our regular meetings are held in the Belair Community Hall, commencing at 7.30 pm and all are welcome.

Christine VK5CTY.

SilentKey

Alan Widdowson VK7CI

It is with regret that we let readers know of the passing of one of our early prominent VK7 amateurs Alan Widdowson VK7CI, who died in late August, he was 91. Charles VK7PP comments: "He was a thorough gentleman and ran the WICEN group some years back when I was involved."

Long time friend John VK7JK commented that Alan started life up in Westbury and followed his father as the local pharmacist. He moved south and was involved with the Kingston Pharmacy, from whence he retired. Alan then went on to become an accountant with the tunnel boring company at Kingston. He continued as a keen photographer and amateur radio operator.

Alan was also an RAAF Wireless Operator during WWII and rose to becoming a Wireless Instructor, teaching many RAAF wireless operators.

Our sincere condolences to his family and friends.

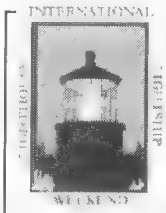
Vale Alan.

Submitted by Charles VK7PP and John VK7JK.

VK7news

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.



The International Lighthouse and Lightship Weekend saw five lighthouses activated in VK7 and the following is a short wrap-up of the Rocky Cape, Mersey Bluff and Pot Boil Lighthouses. The others are covered in separate reports. Stuy VK7ZM and his two sons camped at Rocky Cape lighthouse on the NW Coast of VK7. The operating situation was an Icom IC-7200, MFJ tuner into a 9 m squid pole antenna mounted in the centre of the Landrover with 12 x 6 m ground radials. The 40 m band turned out to be band of choice due to damage to the 20 m loading coil! 40 metres provided some great contacts with over 100 made and 42 being other lighthouses. One of Stuy's sons is aiming to do his Foundation licence and help as second operator next year.

See the 'Big Picture' on page 56 and inside back cover

Mersey Bluff was covered by Keith VK7KW with help from Winston VK7EM and Dick VK7FORF. A trusty FT-857D running from batteries into either an inverted V 80, 40 and 20 m or a squid pole vertical for 40 and 20 metres was used. The weather was a little cold but that did not prevent the making of 41 contacts with other lighthouse stations and many other stations. Much fun was had by all involved and the site has already been booked again for next year!

Gavin VK7VTX operated near the Pot Boil Lighthouse on Flinders Island and commented that of the seven years he has operated in the ILLW this was by far the best. Contacts were made with lighthouses around VK, ZL and Germany. One of the benefits, Gavin comments, is the non-contesting environment of the ILLW which results in long friendly conversations during the weekend between amateurs.

Northern Tasmania Amateur Radio Club

August 11 saw hungry NTARC members at the Royal Oak Hotel in Launceston which included some very funny holiday anecdotes from Joe VK7JG and Peter VK7PD during dinner. A big thank you to Bill VK7AK for the very generous donations to the NTARC repeater fund which will go directly to keeping the excellent NTARC repeater network on air.

Cradle Coast Amateur Radio Club

September 7 to 9 saw the Club operate the VK100WIA callsign from the fascinating Devonport Maritime Museum which overlooks the Mersey River where the Spirit of Tasmania arrives and departs each day. Thanks to all involved with the activation.

North West Tasmanian Amateur TeleVision Group

August 7 was a general meeting of the group and it was reported that it was great to see Barry VK7FR accompanied by XYL Mary VK7NBL attend the meeting. JOTA 2010 support was on the agenda and it was agreed to provide the usual support throughout NW VK7.

Radio and Electronics Association of Southern Tasmania

We welcome Noel Gadd VK7FLCN, who was recently successful in gaining his Foundation licence. Noel is active in JOTA as a Cub Leader and is interested in exploring the opportunities that amateur radio has for Scouts, Cubs and Guides.

Thomas VK7NML operating 24 hours on the club station during the RD.

The club station VK7OTC was put to air during the 2010 RD Contest for the first time in a very long time from the historic Queen's Domain Clubrooms.

Thanks especially to Thomas VK7NML who operated with the author for the full 24 hours plus setup and tear-down and Warren VK7FEET who operated for the best part of the 24 hours fitting in family duties. Thanks also to the many amateurs who dropped in throughout the night and day and operated. It was great fun!

WICEN Tasmania (South) Inc.

The AGM of this group was held on the July 31 with the adoption of the following office holders:

Chair - Chris Webb VK7FCDW,

Deputy Chair - Michael Sweeney VK7FMRS,

Secretary/Treasurer - Roger Nichols VK7ARN,

Operations - Stu Braunholz VK7NXX,

Equipment Officer - Garry Duence VK7JGD

and other Committee members - Brian Welch VK7BW and Rod Finlayson VK7TRF.

Many reports were presented including the equine endurance events support, Targa and Targa Wrest Point, the ILLW activations and many other events.

On the afternoon of August 27, contact was made between the International Space Station and South Hobart Primary School via telebridge.

Astronaut Doug Wheelock fielded questions from very excited Year 2 to Year 6 students. We received some great publicity in the local newspaper and radio networks. A great big thank you to all involved, especially Tony VK5ZAI the Australian ARISS Coordinator and his team of helpers and thanks to Steve VK7OO, Warren VK7FEET and Thomas VK7NML for their local help during the contact.

More information can be found at: http://reast.asn.au/events.php#IS

ar

ISS Contact students (L to R): Felix, Reuben, Alex, Angela, Marcus, Theo, Gabe, Johann, Beau and Joe – all ready to ask their question of Astronaut Doug Wheelock.

A generic PC interface for the amateur experimenter

Part two

Paul McMahon VK3DIP

Introduction

In Part One of this article we looked at the design and building of a simple interface that enabled the ham radio experimenter to easily talk from a PC to some of the sorts of circuits used in radio today, (Reference 1). While Part One presented this in the form of a self-contained 'one with the lot' style of package, just the interface itself as a module can be built into larger projects if desired. If all you want is to talk to an I2C peripheral for example then all you need is the main interface board.

As a summary of the capability of the main board the following table describes the various functions available.

PIN	Item	Dir.	Function	Cmd/s
A0	Analogue Input 0	IN	Analogue Voltage Read	V00,C00 dd
A1	Analogue Input 1	IN	Analogue Voltage Read	V01,C01 dd
A2	Analogue Input 2	IN	Analogue Voltage Read	V02,C02 dd
D0	Bit0/ W_ CLK	OUT	Generic Data bit / DDS Specific data exchange	B01/Dhh
D1	Bit1/DATA	OUT	Generic Data bit / DDS Specific data exchange	B02/Dhh
D2	Bit2/FQ_UD	OUT	Generic Data bit / DDS Specific data exchange	B04/Dhh
PWM	PWM	OUT	Pulse Width Modulated output at 39 kHz	Phh
Fin	Frequency	IN	Measure Frequency	F10
TX	Serial TX	OUT	Logic Level, Inverted Serial Stream 57600 Baud	
RX	Serial RX	IN	Logic Level, Inverted Serial Stream 57600 Baud	
SCL	I2C SCL	OUT	I2C Clock	Waa,hh/ Raa
SDA	I2C SDA/ Trig.		I2C Data in/out, Capture command Trigger input	Waa,hh/ Raa

As an indication of some of the things we can do with this interface, Figure 1 shows an early version of the interface connected up to both power and I2C control a Multimedia TV/FM radio tuner module. (This arrangement was used so that the pair could be built into the one box to be used as a simple frequency selective level meter.) With this setup it is possible under PC control to set the receive frequency, mode and so on anywhere within the limits of the tuner, in this case about 50 MHz to 850 MHz.

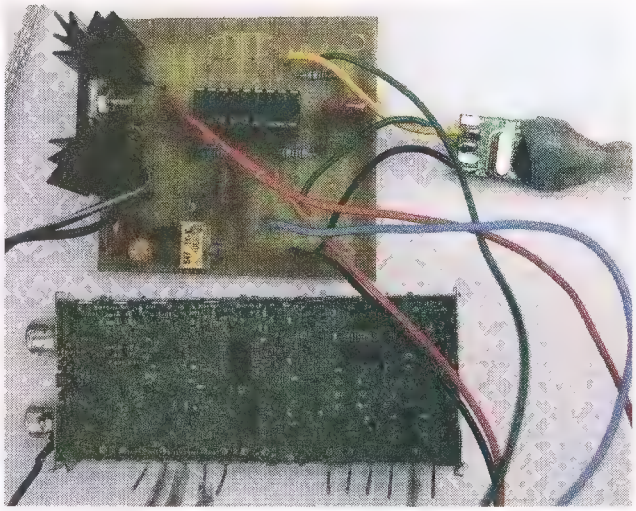


Figure 1: Interface and Tuner Module.

Note in this case this was using an earlier version of the PIC software that did not have the frequency input and had the RS232 serial running at a slower speed and thus used the 16F88 internal oscillator rather than the crystal controlled one shown in Part 1.

Figure 2 shows the interface in the stand alone packaged form being used to debug a AD9850 DDS board that I have plans to turn into a signal generator/sweeper at some stage.

In this case I have things set up to power and control the

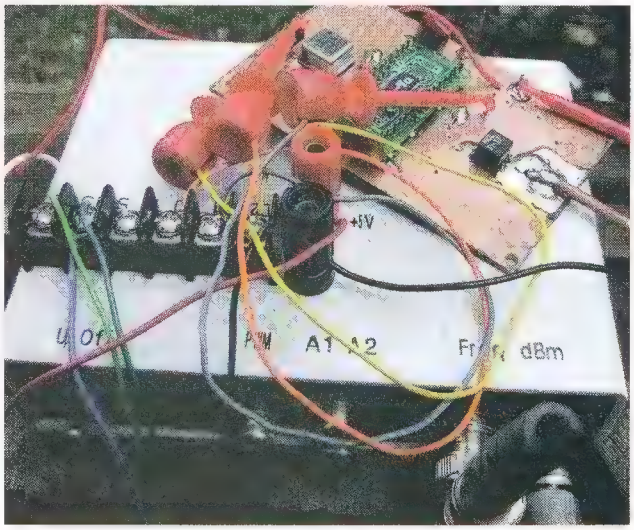


Figure 2: Interface and AD9850 Board.

:DDS, while measuring the output frequency and level.

The view of the Figure 2 setup on the PC end using the generic PC software is shown in Figure 3.

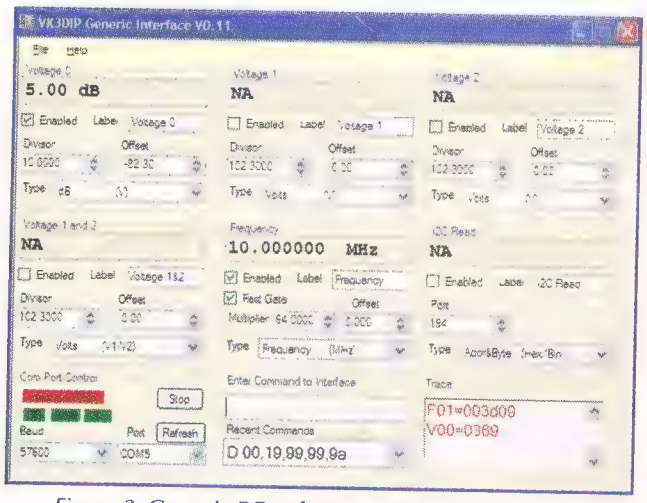


Figure 3: Generic PC software view of DDS setup.

Looking at Figure 3 you can see that I had just sent the command D00,19,99,99,9a to the DDS. As expected with a 100 MHz reference clock this caused the DDS to run at 10 MHz as indicated in the frequency meter section. The DDS also produced an unfiltered (i.e. not necessarily clean) RF output of +5 dBm (about 3 mW), as indicated by the 5 dB value read on the V0 meter. The offset value of -82.3, with a divisor of 10, in the case of my prototype, roughly calibrates this scale to read in dBm (or dBmilliwatts) in the HF frequency range.

Interface Commands

General

No matter whether you have built the true RS232 version or the USB one, the command structure to the interface is the same. You can test out the interface with either the supplied Generic PC application (PC Windows only, I am afraid), or a terminal program as discussed in Part 1. The bottom line is that communications are 8 data bits, no parity, plain (ASCII) person readable characters, with a simplified XON/XOFF flow control which most of the time you can just forget about. The only thing you may need to check is that your terminal package sends the new line or line feed character at the end of a line, as some packages by default just send a carriage return only. Carriage return and line feed is fine and should be obtainable in most packages.

The basic command structure used with the interface consists of a single upper case character command type followed by a variable number of parameters in hexadecimal using character digits 0 – 9 and lower case a-f , finally terminating with a line feed character. Note, the a to f characters in hex numbers must always be lower case, upper case letters are only used for command types. So in a terminal program you just type the command in and hit enter and the interface will do what you told it. Once the interface has received the new line character at the end of the command it will send an XOFF character back to the PC to tell it to wait and not send anything else while the interface is working doing what the command specified. When finished the interface will send whatever data has been requested back to the PC (or 'OK' if no data is applicable) with finally an XON character to tell the PC it is ready for the next command.

Commands can be as simple as a single line feed character by itself which will just repeat the last command whatever it was, or a '?' line feed which will return the interface version information. Commands can also be quite long, sending many bytes of data to a particular I2C address for example.

The example given in Figure 3 above of 'D 00,19,99,99,9a' <CR><LF> is a command as discussed using the DDS interface. The 'D' is the command and in this case the five bytes of hexadecimal data separated by spaces or commas are the command parameters, in this case the data sent to the DDS. For completeness in this case, as no data is returned by the DDS, the interface will send back OK to the PC when completed sending to the DDS. If the interface doesn't understand the command, or if too many, or too few parameters are given, an error message will be returned to the PC.

You should note that the space, comma, and most other punctuation and special characters are treated as white space by the interface so 'D 00,19,99,99,9a<CR><LF> ' will have exactly the same effect as 'D001999999a<LF>' or even 'D - 00 - 19 ; 99 : 99 . 9a<CR><LF>'. These extra characters are allowed just to make the commands more human readable if desired. If you are really trying to get as quick a response as possible out of the interface then just leave them out.

The following sections give details for the individual specific commands.

I2C

This is not a tutorial on what I2C is or how it works; if you are interested in this Philips have some application notes, and standard documents that explain all of this, refer Reference 2. For the purposes here I2C is a mechanism used by many integrated circuits and modules for control and data transport. It uses a shared three wire bus of an earth, the SCL (clock) and SDA (Data) lines. An I2C master device seizes the bus and addresses one or more slave devices passing write (set) commands or read commands; the addressed slave device replies over this same bus back to the master. Each device type has a unique address and if it makes sense to have multiple devices of the same type on the same bus there is usually some mechanism to vary a device's address.

It should also be noted that the least significant bit of the device address indicates if this is a read or write command. This means that devices effectively have two device addresses, one for write which is even or has bit 0 equal to 0, and one for read which is the same as the write one save that it is odd or has bit 0 equal to 1. Using this interface you can use either address for either command type as the interface knows what you wanted from the command type and will correct bit 0 accordingly. I tend to just use the write address for everything and let the interface sort it out.

Often different device types and particularly things like memory devices have extended addressing techniques

with sub addresses and the like. To handle this, the commands in this interface provide a couple of variants.

I2C Write – the 'W' command.

The interface acts as an I2C master and writes the data contained in the command over the I2C bus to the addressed slave device.

Syntax PC to Interface:

W aa, hh,hh,hh,hh,.... <LF>

Where:

W is the upper case ASCII character 'W'

aa is two ASCII characters representing a hexadecimal byte 00 to ff . Typically this first byte represents the address of the required slave device.

hh is a variable number of ASCII character pairs representing hexadecimal bytes, 00 to ff. In the current version of the interface the number of bytes allowed is limited to 49 plus the address byte = 50. If sub addressing is required as used in some devices the first byte hh would be the first level of sub address and so on. Note. Bytes are sent left to right, that is, the first byte after the W is sent first, the next byte next and so on.

Commas, spaces and so on are treated as white space and are simply to make things more human readable and are ignored by the interface.

<LF> is the ASCII line feed or new line character hexadecimal byte 0a.

Response Interface to PC:

OK <CR><LF>

Example:

PC -> Interface W c2,1d,58,8e,90<CR><LF>

Interface -> PC OK<CR><LF>

In the case of a Philips or compatible tuner module (FM1216 etc. with the address select lines open, that is, address c2) this command would select the TV IF of 38.9 MHz, a step size of 62.5 kHz, mid band, low noise (slow) tuning, and a receive frequency of 430.600 MHz. See individual I2C device data for details.

I2C Read – the 'R' command

The interface acts as an I2C master and requests a read from the addressed slave device.

Variant 1. 'Read one byte from I2C device at slave device address aa

Syntax PC to Interface:

R aa<LF>

Response Interface to PC:

Raa=dd <CR><LF>

Where:

R is the upper case ASCII character 'R'

aa is two ASCII characters representing a hexadecimal byte 00 to ff and is the address of the slave device.

dd is two ASCII characters representing a hexadecimal byte 00 to ff and is the data byte read from the slave device.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

Example:

PC -> Interface R c2 <CR><LF>

Interface -> PC Rc3=c0<CR><LF>

In the case of a Philips or compatible tuner module (FM1216 etc. with the address select lines open, that is, address c2) this command would read the single status byte from the tuner and in this example it would indicate that the tuner has powered up, is locked on frequency and that the signal level is zero. Note the interface fixed up the address used to allow for a read.

Variant 2. 'Read nn bytes from I2C device at slave device address aa

Syntax PC to Interface:

R aa, nn<LF>

Response Interface to PC:

Raa=dd <CR><LF>

Raa=dd <CR><LF>

Raa=dd <CR><LF>

.... nn times

Where:

R is the upper case ASCII character 'R'

aa is two ASCII characters representing a hexadecimal byte 00 to ff and is the address of the slave device.

nn is two ASCII characters representing a hexadecimal byte 00 to ff and is the number of data bytes to be read from the slave device.

dd is two ASCII characters representing a hexadecimal byte 00 to ff and is a data byte read from the slave device.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal

Photo 1: The LCD screen

byte 0d.

Variant 3. 'Read nn bytes from I2C device at slave device address aa, with 8 bit sub address ss. Note, some devices will auto increment sub addresses, see individual device data sheets for details. This interface does not know if this is the case so all data retrieved will be indicated as coming from the initial sub address.

Syntax PC to Interface:
R aa, ss, nn<LF>

Response Interface to PC:
Raass=dd <CR><LF>
Raass=dd <CR><LF>
Raass=dd <CR><LF>
.... nn times
Where:

R is the upper case ASCII character 'R'

aa is two ASCII characters representing a hexadecimal byte 00 to ff and is the address of the slave device.

ss is two ASCII characters representing a hexadecimal byte 00 to ff and is the sub address in the slave device that we want to read.

nn is two ASCII characters representing a hexadecimal byte 00 to ff and is the number of data bytes to be read from the slave device.

dd is two ASCII characters representing a hexadecimal byte 00 to ff and is a data byte read from the slave device.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

Variant 4. 'Read nn bytes from I2C device at slave device address aa, with 16 bit sub address ssss. Note, some devices will auto increment sub addresses, see individual device data sheets for details. This interface does not know if this is the case so all data retrieved will be indicated as coming from the initial sub address.

Syntax PC to Interface:
R aa, ssss, nn<LF>

Response Interface to PC:
Raassss=dd <CR><LF>
Raassss=dd <CR><LF>
Raassss=dd <CR><LF>
.... nn times

Where:

R is the upper case ASCII character 'R'

aa is two ASCII characters representing a hexadecimal byte 00 to ff and is the address of the slave device.

ssss is four ASCII characters representing two hexadecimal bytes 0000 to ffff and is the sub address in the slave device that we want to read.

nn is two ASCII characters representing a hexadecimal byte 00 to ff and is the number of data bytes to be read from the slave device.

dd is two ASCII characters representing a hexadecimal byte 00 to ff and is a data byte read from the slave device.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

Read Voltage - the 'V' command

The interface is setup to provide a 10 bit number representing the value of the voltage read on the specific pin. The 1024 possible values (0000 to 03ff in hexadecimal) read will be spaced between 0 volts and whatever value has effectively been set on the reference pin. To convert from the received value to voltage use the following formula.

Voltage = Reading x Reference / 1023

In the prototypes case as discussed in Part 1 the effective reference for ports 1 and 2 is 10 volts, and this simplifies to:

Voltage = Reading / 102.3

See Part 1 for details of setting the reference values and range.

Three ports are provided by the interface 0, 1, and 2. With the V command you can request the voltage on any one of these ports or alternately all three ports. An optional parameter can be used to specify a number of repeated reads of that port.

The basic voltage read takes 20 microseconds to sample a voltage, and an additional 1 to 2 milliseconds even at 56700 baud to communicate this back to the PC. So while you could sample some reasonably slowly changing voltage waveforms this interface is not really suitable for use as, say, an input to a software oscilloscope. The special purpose 'C' or capture command can do a little better than this timing but has other limitations.

In my case I use port 0 as the port for the AD8307 power measurement with the other two being setup as general purpose 0 – 10 volt inputs.

Syntax PC to Interface:

V aa, nn<LF>

Response Interface to PC:

Vaa=dddd <CR><LF>

Vaa=dddd <CR><LF>

Vaa=dddd <CR><LF>

.... nn times

If aa in the V command = 03 then individual results for each port will be returned, that is:

V00=dddd <CR><LF>
V01=dddd <CR><LF>
V02=dddd <CR><LF>
V00=dddd <CR><LF>
V01=dddd <CR><LF>
V02=dddd <CR><LF>
.... nn times

Where:

V is the upper case ASCII character 'V'

aa is two ASCII characters representing a hexadecimal byte 00 to 03 selecting one; 00, 01,02 or all (03) ports.

dddd is four ASCII characters representing the hexadecimal number 0000 to 03ff and the voltage read on that port.

nn is two ASCII characters representing a hexadecimal byte 00 to ff and is the number of times the voltage read is to be repeated. If this value is omitted it defaults to a single read.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

Read Frequency - the 'F' command

The interface implements a standard frequency measurement scheme in which a counter is zeroed, a gate is opened for a precisely defined amount of time to let pulses through, and the counter increments as each pulse is received. Once the gate is closed the value in the counter represents the number of pulses or cycles in that time. For example if the gate time was one second and the counter counted 100 then this would correspond to 100 cycles in a second or 100 Hertz. If the gate time had been one tenth of a second, then again assuming a count of 100, this could only have been achieved if the input frequency was ten time higher than before, that is 1 kHz. Faster gate times lead to a quicker, more responsive, frequency measurement but trade this off with reduced precision. In the example given the one second gate provides one Hertz resolution, while the one tenth of a second gate only provides 10 Hertz resolution.

The frequency measurement capacity of the interface as implemented is limited to two different gate times, one second and a tenth of a second. With a three byte counter the maximum count is ffffff or 16,777,215 in decimal. With a one second gate this would represent a frequency of 16.777215 MHz, with a tenth of a second gate this would be nominally 10 times this frequency (or some 167 MHz) however the timer1 input of the 16f88 is only good to about 20 MHz anyway, so this limits the un-prescaled upper limit of frequency measured. In the version of the interface detailed in Part One, I used a divide by 64 prescaler chip which is good to about 1 GHz; in this case neither gate times will have a problem with reaching this limit. If however you use a faster prescaler or one with a lower divisor then it is possible that you may find a case where the one second gate reaches maximum count before the gate time expires. Within these limitations for the set up described in Reference 1 the actual frequency measured will be equal in Hertz to 64 times the count for the one second gate and 640 times the count for the tenth second gate.

The ultimate accuracy of this measurement will be dependent on how accurate the 10 MHz crystal is. In the board layout given in Part 1, no particular provision was made on the board for a trimmer, though one could be squeezed in by replacing one of the capacitors to earth if desired. I haven't bothered doing this as my experience is that while you may be able to set the crystal to some particular value you end up with more thermal drift to compensate. In this case, as the actual count is processed by a PC before it is displayed it is easier to software calibrate any fixed differences rather than to tweak a trimmer. The biggest source of errors that is hardest to calibrate away is thermal drift of the clock. If absolute accuracy is important you can either recalibrate against some known standard just before taking a measurement, or implement some form of oven controlled or similar oscillator. In the source code and object available from Reference 4 I have included an 'E' version of the PIC code which is identical save that it expects an external 10 MHz clock such as from a temperature controlled oscillator module, rather than using the PIC's own oscillator.

ELECTRONICS ONE-STOP-SHOP

Ultrasonic Antifouling for Boats

Refer: Silicon Chip Magazine September/November 2010

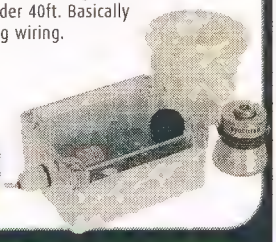
Many of you know that you can buy $3-8,000 imported marine growth electronic antifouling systems. Jaycar, with Silicon Chip have developed a similar system based on this technology and information in the public domain. This project uses the same ultrasonic waveforms and virtually identical ultrasonic transducers mounted in sturdy polyurethane housings. By building yourself (which includes some potting) you save a fortune! Standard unit consists of control electronic kit and case, ultrasonic transducer, potting and gluing components and housings. Research reveals only one transducer is needed for boats under 40ft. Basically all parts supplied in the project kit including wiring.

- 12VDC
- Suitable for power or sail
- Could be powered by a solar panel/wind generator
- Call first for availability
- Available end of October

$249.00

*Price includes epoxies

KC-5498



Asuro Programmable Robot Kit

In addition to six collision sensors and an optical unit for following a line, Asuro has two odometers and several display elements. The supplied duplex infrared interface permits wireless programming, as well as a remote control with a PC. The "brain" of the robot is a RISC processor that also permits the processing of complex programs. Asuro is ideal for hobbyists, school and student projects, schools, training in the electrical engineering and mechatronics fields as well as university course. This is not a kit for the faint-hearted! Some soldering required.

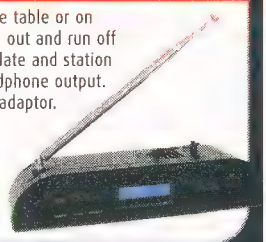
$79.95

Compact DAB+ & FM Radio Tuner

Tune into digital radio. Perfect for the bedside table or on the kitchen window sill, it can even be taken out and run off batteries. The LCD clearly displays the time, date and station ID. Alarm mode, 10 station memory and headphone output. Requires 4 x AA batteries or the included AC adaptor.

- DAB+/FM
- Backlit 2-line LCD
- Headphone socket
- Size: 178(W) x 76(W) x 40(D)mm

$89.00



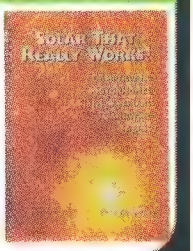
Solar that Really Works

A highly informative and practical guide showing the do's and don'ts of DIY solar installation. From caravans to fishing lodges, it features detailed descriptions of working solar systems with illustrations. Written by acclaimed Australian author Collyn Rivers.

Softcover, 82 pages, 290 x 210mm

$42.50

Also available in this series:
Motorhome Electrics BE-1536 $42.50
Solar Success BE-1537 $47.50



For your nearest store log onto our website www.jaycar.com.au or call 1800 022 888

To order call 1800 022 888
www.jaycar.com.au

Jaycar electronics

Syntax PC to Interface:

F aa <LF>

Response Interface to PC:

Faa=dddddd <CR><LF>

Where:

F is the upper case ASCII character 'F'

aa is two ASCII characters representing a hexadecimal byte 10 or 01 representing the gate time of one second (10) and point one second (01).

dd is six ASCII characters representing three hexadecimal bytes 000000 to ffffff and is the value of the counter after the relevant gate time.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

Pulse Width Modulated Output – the P command.

The interface proves a single output which has a variable duty cycle square (well rectangular, really) wave output at a fixed frequency of 39 kHz. This output when low pass filtered produces an effective DC output with level proportional to the duty cycle. In this interface the duty cycle can be set at any value from 0 to 255 (00 to ff hex), a duty cycle of 0 corresponds to the output being always off, a duty cycle of 1 corresponds to a very thin pulse, 2 slightly wider, and so on up to 255 which corresponds to the output always on. The net effect depends on exactly what scaling has been set up in the filter and buffer circuitry but in the prototype described in Reference 1, 00 equates to 0 Volts DC out, ff equates to 2 Volts DC out, with some 254 values in between.

Syntax PC to Interface:
P aa <LF>

Response Interface to PC:
OK <CR><LF>

Where:
P is the upper case ASCII character 'P'

aa is two ASCII characters representing a hexadecimal byte 00 to ff representing the duty cycle of the output. 00 is output off, ff is output hard on, the values in between equate to intermediate states.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

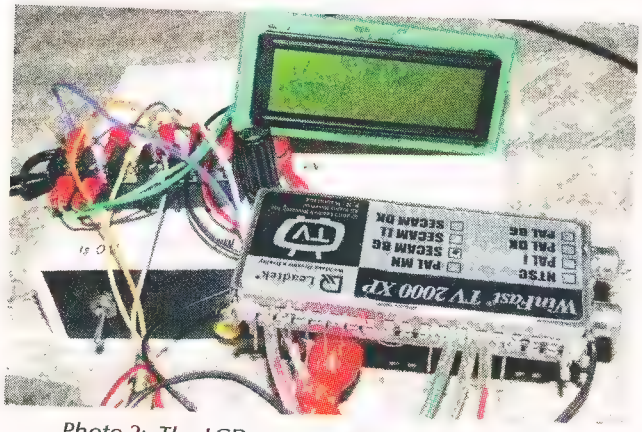


Photo 2: The LCD screen, and associated tuners.

Digital Bits output – the B command

The interface provides three digital output lines which can be either individually addressed using the B command or alternately used as a set using the D command - see later.

In the individual bits case the state of all the three lines are set with a single B command with the various combinations of states represented by the hexadecimal numbers 00 to 07 with numbers outside this range causing an error message to be returned. The states of the three lines RB7, RB3, and RA4, (or D2, D1, and D0 respectively as marked on the PCB of Part 1) can be thought of as the binary equivalent of the hexadecimal value. The various states are represented in the table below.

B Hex	Binary	D2 or RB7	D1 or RB3	D0 or RA4
00	000	Low	Low	Low
01	001	Low	Low	High
02	010	Low	High	Low
03	011	Low	High	High
04	100	High	Low	Low
05	101	High	Low	High
06	110	High	High	Low
07	111	High	High	High

Once a B command has been recognised by the interface the line states will be set to the requested pattern and will remain in that state until further commands are received.

Note, the digital outputs are direct from the PIC and while they will have no problems driving normal 5 volt logic level inputs of other devices, and are even able to provide a few milli-amps to light a LED if needed, they are not suitable by themselves for high powered use. If you wish to control larger loads or the like then you will need to provide suitable interface electronics or relay drivers etc.

Syntax PC to Interface:
B aa <LF>

Response Interface to PC:
OK <CR><LF>

Where:

B is the upper case ASCII character 'B'

aa is two ASCII characters representing a hexadecimal byte 00 to 07 representing a bit pattern on the RB7, RB3, and RA4 pins. 00 hex or 0000 binary corresponds to RB7,RB3,RA4 = 0,0,0 and 07 hex or 0111 binary corresponds to RB7,RB3,RA4 = 1,1,1.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

DDS control output – the D command

The DDS command utilizes the same three lines as used by the B command but has specific features to match the requirements of devices like the AD9850, or AD9851, or similiar. These devices have a serial programming mode that uses a three wire interface. One line is a clock, one carries the data, and the last is used to latch the data. In the case here the RA4 line (marked as D0 on the PCB) is used as the clock or W_CLK as referenced in the Analog Devices Data sheet, RB3 (D1) is DATA, and RB7 (D2) is FQ_UD. A check of the DDS Data sheet will show that the order of data to be programmed is reversed between the serial and

the parallel programming interface. This also shows up in the Analog Devices web design applet (see Reference 6) with different results being shown for serial and parallel load. To make things as simple as possible for the user of this interface the data order used by the D command takes its parameters in the same order as the AD parallel load even though it is actually loading it serially. The interface will take care of effectively sending the data to the AD9850 in reverse order. For those that don't or can't get to the internet for the Analog Devices web application I have included the source and executable version of a similar helper application with the other components in Reference 4. More detail of this later.

Syntax PC to Interface:

D hh,hh,hh,hh,hh <LF>

Where:

D is the upper case ASCII character 'D'

hh is five ASCII character pairs representing hexadecimal bytes, 00 to ff. The command will accept more than 5 bytes but the AD9850 only uses 5 which equates to the 40 bits required to program the device. Note. The bytes are sent to the DDS device in the inverse order to which they are entered, that is, right to left, least significant bit first. The effect of this is to have the bytes presented to the command in the same order as for DDS parallel programming.

Commas, spaces etc. are treated as white space and are simply to make things more human readable and are ignored by the interface.

<LF> is the ASCII line feed or new line character hexadecimal byte 0a.

Response Interface to PC:

OK <CR><LF>

Example:

PC -> Interface D 00,19,99,99,9a

(With a 100MHz reference clock this sets the DDS to run at 10 MHz)

Interface -> PC OK<CR><LF>

Capture Voltage - the 'C' command

This command was instigated by my brother-in-law Charles VK3CLE. He wanted something to capture the trace off some older test equipment like a spectrum or network analyser (and equivalent home built versions) without having to use a camera. Most of these things have a voltage output that mirrors the trace information; originally intended for connection to pen or chart recorders. The idea is to capture this voltage directly to a PC as data so it can be stored, and analysed, more readily. The 'V' command can be used for this but has some limitations in terms of the possible sampling rates, the accuracy of the timing between samples, and the synchronisation of the data. See the 'V' command for more details. The 'V' command can be used for capturing very slow scans but the synchronisation issue remains. Without some form of synchronisation it is hard to figure out which sample corresponds to which point in time. The 'C' command addresses all these issues in that it samples as fast as the PIC can, storing the samples internally and when finished sends them all to the PC. The 'C' command also can add an accurate, repeatable delay between samples. The final feature of this command is that it has a simplistic trigger function. Once the PIC has received the command it will not begin its capture of data until port B pin 1 undergoes a high to low transition. This pin is also used for the I2C SDA line and is so marked on the PCB and circuit diagrams of Part 1. Note, because of the I2C use this line has a pull up resistor to 5 V on the main PCB and thus it will normally be high unless pulled low. When you want the sampling to start you could pull the SDA line low with a pushbutton to earth. Alternately with a suitable electrical level interface this line can be connected to the 'pen down' control output on many older pieces of test equipment which indicates the start of a scan. This way if the command is issued while a scan is underway (that is, line low) the interface will wait for the scan to finish (line go high) and keep waiting until it goes low again, that is, starts a new scan. Only then will the interface start capturing data.

This command can address the same three analogue ports used by the 'V' command but there is no provision to capture on multiple ports at the same time. The port is selected via the first parameter of this command. The second parameter sets the additional delay in 100 microsecond intervals between samples. The intrinsic or minimum delay between samples is of the order of 100 microseconds so a setting of delay of 00 corresponds to 100 microseconds, 01 is 0.2 milliseconds and so on. The number of samples taken is limited by the available memory on the PIC, and even after some tricks to efficiently store the 10 bit samples without wasting space, there is only room for some 256 samples available.

Because this command needs as much internal space as possible the shortcut of repeating the command with just a <LF> has been disabled. The command can of course be repeated by sending the whole command again. This only applies to the 'C' command all other commands are repeatable with just the <LF>.

Syntax PC to Interface:

C aa, nn<LF>

Response Interface to PC:
Caa,nn <CR><LF>

[<CR><LF>

dddd <CR><LF>

dddd <CR><LF>

dddd <CR><LF>

.... Repeats depends on available memory 256 in version 4.0

dddd <CR><LF>

] <CR><LF>

Where:
C is the upper case ASCII character 'C'

aa is two ASCII characters representing a hexadecimal byte 00 to 02 selecting port 00, 01, or 02.

dddd is four ASCII characters representing the hexadecimal number 0000 to 03ff and the voltage read on that port.

nn is two ASCII characters representing a hexadecimal byte 00 to ff and is the additional inter sample delay in 100's of microseconds, that is, ff=25.5 milliseconds.

<LF> is the ASCII Line Feed character hexadecimal byte 0a.

<CR> is the ASCII Carriage Return character hexadecimal byte 0d.

PC Application

Of course you don't have to use the interface with the supplied PC program, if you want you can either write your own program, perhaps based on the source code provided, or if you are more comfortable with some other language there are a myriad of possibilities. The supplied PC application is something that will do for general usage of the interface when developing or testing out initial phases of some project. If however you want something to use to control your homebrew spectrum analyser or some such then you are pretty much going to have to do your own thing.

Prerequisites

As well as the software in the distribution from Reference 4 the PC software requires the dot net runtime and whatever drivers the particular USB/Serial converter you are using needs to be loaded. If you are going to use the USB option do this first before running the Generic Interface program.

The Generic Interface PC application like the various helper applications are produced with the free Microsoft Visual Basic 2008 Express edition (Reference 5). In order to run they need to have a version of the Microsoft .Net run-time (pronounced dot Net) installed on your machine. In many cases this will probably already be installed, but just in case I use version 3.5 of the routines and the run-times for which are downloadable from the Microsoft download site in Reference 7.

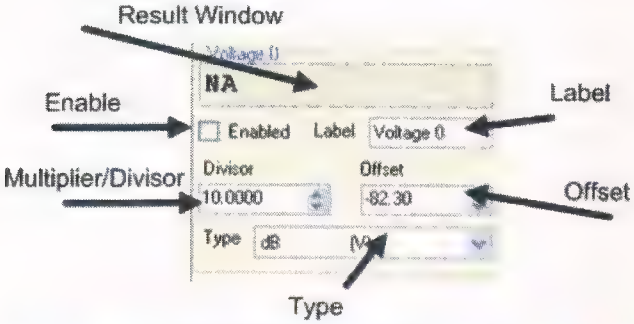


Figure 4: An Input Frame.

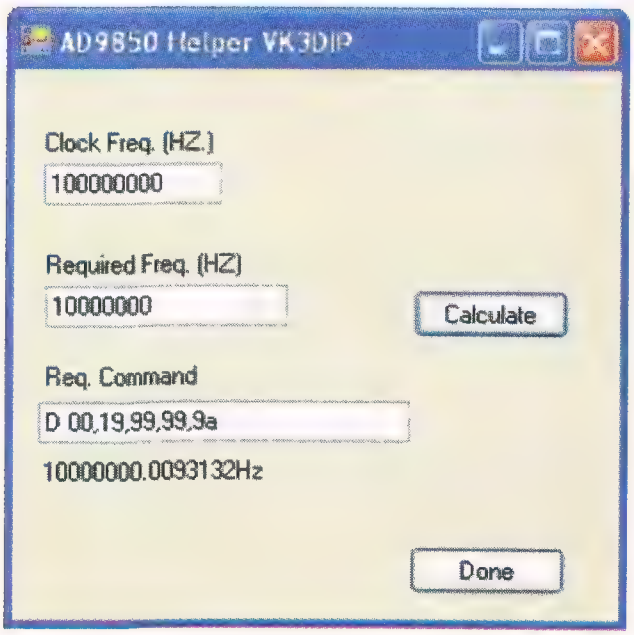


Figure 5: The AD9850 Helper Application.

Given that you have the .Net runtime installed then to run the main programs or the helpers all you need to do is to copy the .exe files from the distribution (Reference 4) onto your PC in a convenient folder and double click on them. If desired you can make shortcuts on the desktop if you find you are using them a lot.

The distribution also contains the full source and MS VB Express 2008 project files for all the software mentioned here so if you want a new or different feature have a go at changing it yourself, it is not that hard to do.

Main Screen

When you run the main program (GenericInterface.exe) everything being OK you should see the main screen. If you are running it on a netbook or PC that doesn't have a serial port it may complain that it can't find a free port but once you plug the USB connection to the interface into the PC, a click on the port refresh button on the bottom left hand side should find it.

The Main screen of the PC application is shown in Figure 3. This main screen is somewhat crowded and consists of three rows of three framed sub areas. The top row of frames corresponds to the three analogue inputs on the interface. The middle row three frames are for a derived or combined value made up of two of the analogue inputs, the frequency input, and the I2C read input. The lower row of three looks after the communication port, the sending of ad-hoc commands, and the final one is a trace window showing the flow of commands and results going backwards and forwards.

All of the top six frames are structured somewhat similarly. A typical frame is shown in Figure 4.

The Enable check box if selected will cause the PC software to regularly poll the interface for the relevant item. In the case in Figure 4 this is Analogue Voltage Input 0. The PC software will send the appropriate command to the interface and retrieve the hexadecimal value read from the port. The Type drop down selects how this value is treated. The type of treatment is indicated in the brackets of the type value. If it is just (V) then the result displayed in the results window will be calculated by:

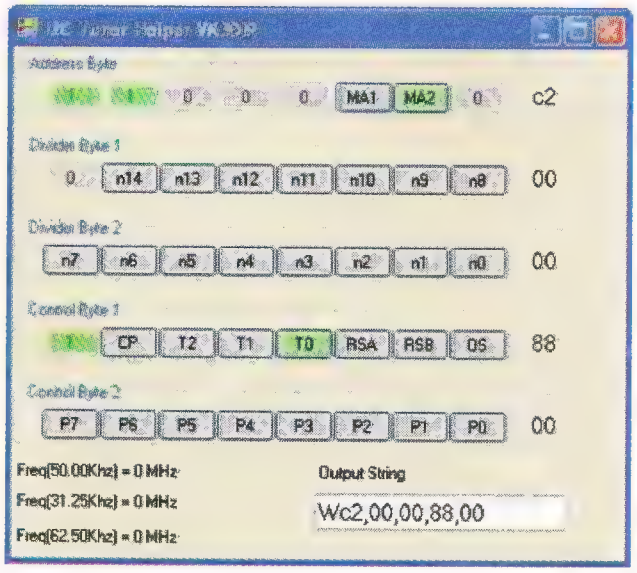


Figure 6: The I2C Tuner Helper Application.

1 Converting the hexadecimal value received to decimal.

2 As the label suggests the value from 1 is then multiplied or divided by the number set in the Multiplier/Divisor field.

3 The resultant from 2 then has the number in the offset field added to (or subtracted from) it. The end result is then placed in the result window followed by the units indicated in the Type.

4 The Label field is only used by the logging function to label the particular end value recorded in the logging file if set on.

If the type treatment shows as (LogV) then the treatment is the same as above however after step 1. the base 10 Logarithm of the value is taken and this is used for the remaining steps. Similarly if (V*V) is shown the value is squared and so on.

Using the multiplier/divisor and the offset it is possible to calibrate and compensate for most inaccuracies and/or record in whatever units are required.

By default the various input windows start up with enabled off, that is, they won't self prompt for input. Similarly if you haven't selected the correct baud rate and com port and pressed start in the com port control frame nothing will happen. Once you have successfully pressed start any enabled frames will start polling. If however while started (that is, connected to the com port) you manually type a command into the command frame which results in one of these values being returned the appropriate frame will still capture the result. As manual commands are typed and sent to line with the enter key, they are stored in the recent commands dropdown just in case they need to be used again.

At the top of the main screen are a couple of menus File and Help.

Help brings up a small window with my contact details if you need to contact me or see if there are any updates etc.

From the file menu you can:

- Save or load (open) a particular set of configurations
- Turn logging to a file on or off
- Control which items show up in the trace window
- Run a simple script of commands.

Scripting

The PC interface software supports a simple form of scripting which allows:

- Setting of any configuration item
- Sending of any command
- Inserting a comment in the log
- Inserting a delay
- Prompting the user for
    - Yes/No
    - Continue
    - A value

More details of this will be found in the distribution.

Helper Apps.

Screen shots of the two helper applications provided are shown in the Figures 5 and 6 (facing page).

Figure 5 shows the AD9850 helper application . Operation is very basic, enter the clock frequency, the required output frequency, and hit the calculate button. You will then be given the required command, which can be cut and pasted into the command window on the generic interface software, or just sent via a terminal program. The helper also shows the actual frequency obtained after allowing for quantisation and so on.

Figure 6 shows the I2C tuner helper application. The screen represents the typical five registers present in a Phillips I2C PLL or equivalent as used in many TV tuners.

To use click on those bits you wish to set as determined by the device datasheet. A further click will clear the bit. Each time you change a bit value the output string will update along with the nominal receive frequencies assuming a particular PLL step size. Again the command can simply be cut and pasted to the command window on the generic application or sent any other way that suits.

Conclusion

This interface has hundreds of uses for the ham home brewer. I have a number of projects in line for its use in an embedded sense, let alone the all in a box setup which I use as a portable lab. If you come up with any other good uses, or have some comments or suggested improvements please send me an email at VK3DIP@yagicad.com.

References

Reference 1.
A Generic PC Interface for the Ham Experimenter
Part 1 Introduction and Build.
Paul McMahon VK3DIP
Amateur Radio magazine, September 2010

Reference 2.
THE I2C-BUS SPECIFICATION
VERSION 2.1
JANUARY 2000
Philips Semiconductors (Now NXP Semiconductors) - Document Number 9398 393 40011
Available as a PDF from: http://www.nxp.com/

Reference 3.
PIC Simulator IDE http://www.oshonsoft.com/

Reference 4.
The full source for all of the PIC and PC software used in this interface can be found on the VK3DIP/Yagicad Homepage at: www.yagicad.com
In this case it is at least on the miscellaneous projects file page.
The PIC code is for the Basic compiler built into PIC Simulator IDE – from Reference 3. And The PC code is in Visual Basic.net and is compiled with the free Microsoft 2008 Express version of VB. Reference 5.

Reference 5.
Thank you, thank you Microsoft for this wonderful free powerful tool for experimenters.
Available at: http://www.microsoft.com/express/vb/Default.aspx

Reference 6.
Analog Devices Web Applet for DDS Design for example the AD9850 one can be found at:
http://designtools.analog.com/dt/dds/ad9850.html

Reference 7.
The Microsoft .Net 3.5 redistributable (that is, runtime) can be found at the Microsoft Download centre by searching for '.net' - http://www.microsoft.com/downloads

SilentKey

Alan David Nutt VK2GD

It is with great sadness that we record the passing of Alan Nutt VK2GD, at Port Macquarie on Monday 5th July 2010 after a short illness. He was aged 75 years. Alan is survived by his wife Elaine and their five children. His funeral was at Port Macquarie on Friday 9th July with a large attendance from a wide cross section of the community including many members of the amateur radio fraternity.

Alan led a very interesting and full life. After completing his Leaving Certificate at Sydney Boy's High School in 1949, Alan began his working life in 1950 and gained numerous technical and theological qualifications over the next six years. He and Elaine were married in 1955.

By 1956, Alan was already working as a research and development technician with the Telecommunications Company of Australia, part of the Philips Company, a leader in the rapidly evolving telecommunications industry.

From 1957 to 1969, Alan undertook a missionary posting in New Guinea. His knowledge and ingenuity served him well in servicing and operating an extensive communications network in a very challenging environment. During this period, he gained an enormous amount of practical experience, which he continued to share with others throughout his life. Yes, he did find time to enjoy his hobby of amateur radio as VK9AN.

Always taking every opportunity to contribute to the organisations to which he belonged, Alan served as a Councillor of the NSW Division of the Wireless Institute of Australia in 1961 and 1962 during a furlough from his posting to New Guinea.

Many amateur radio operators first met Alan through the pages of the magazine *Electronics Australia*. When Alan returned to Australia in 1970, as VK2GD he became a Technical Journalist for a year for that magazine, read by almost everyone with an interest in electronics.

Alan then spent an interesting 10 years as divisional manager for record manufacture at Ambassador Press in Granville. This was followed by three years at Shaw Consulting Services in Castle Hill as a technical consultant to the marine insurance industry.

From 1983 to 1995, Alan taught electronics at the Sydney Institute of Technology at Ultimo. Teaching was one of Alan's great loves and he excelled at clearly explaining technical concepts in a manner that everyone was able to understand and remember.

After retirement in 1995, Alan still continued to teach part time at both high school and TAFE in Sydney, and later in Port Macquarie when he and Elaine moved to there in 1997.

He immediately joined the Oxley Region Amateur Radio Club as a very active member. He was the Club Secretary for three years from 1999 to 2002, followed by three years as President from 2002 to 2005. After a year as Vice President, he again became President in 2006 for another three years until 2009, when he continued to serve on the committee.

With his great interest in education, Alan was quick to gain accreditation as a WIA Assessor for all grades of amateur radio licence in 2005 when the Foundation licence was introduced and the structure of amateur radio licensing changed. He teamed up with fellow club member Larry Lindsay VK2CLL, who also became an assessor at the same time. Together they added more than 30 new amateur radio operators to the hobby through teaching and assessing candidates.

Alan's many interests, included radio broadcasting, where he was able to use his constantly updated technical skills in solving many problems for Radio Rhema and various other endeavours.

Alan will be remembered for his great enthusiasm for all things, and for so freely taking the time to share his knowledge and experience using his great gift as a teacher. He was a real gentleman and a great communicator in every sense of the word. Alan was a committed Christian and that was mirrored in the way he treated his fellow man.

The members of the Oxley Region Amateur Radio Club join with the wider amateur radio fraternity in expressing sincere condolences to Elaine and the family members.

Vale Alan David Nutt VK2GD.

Submitted by Henry Lundell VK2ZHE and John McLean VK2KC.

ar

David Lording VK3ADL

David Lording VK3ADL of Cowes, Philip Island, passed away suddenly in his sleep on 13 September.

I had known David for a mere nine years and we became good friends through this hobby. I am sure others have known him for considerably longer and could probably fill in much more detail.

I first made contact with David in November 2001 when he had the callsign VK3MED. David was a constant wealth of information for me since I was then new to the hobby. He moved from being a CBer to Novice and on to Advanced. David, myself and many others had lots of QSOs on 2 metres via VK3REC, 70 cm via VK3RHF and of course HF. I shall very much miss our morning drive time QSOs on RHF and coffees in Cowes.

David is survived by his parents, sister and his daughter. He is now with his brother, who lost his life in a motorcycle accident several years ago. A number of our amateur fraternity have expressed their memory of David as "a good operator and a gentleman".

Vale David.

Submitted by Ron Cook VK3JRC

ar

ILLW lights up record numbers

The 2010 International Lighthouse & Lightship Weekend was a great success. There were 447 registrations, a record, with Germany topping the list with 60 registrations. Australia had 55 lighthouse stations activated with 17 in VK2, 12 in VK3, 10 in VK4, 4 in VK5, 6 in VK6 and 6 in VK7.

(Ed: A great effort as Germany has about five times as many amateurs as we do but, on the other hand, we have many more lights. Another pleasing feature was the 'hardship' factor, some of the sites were not easy gets with one intrepid group backpacking their station 18 km into the light at Wilsons Promontory, the southernmost mainland light.)

Tablelands Radio &Electronics Club at Archer Point

Dale McCarthy VK4DMC

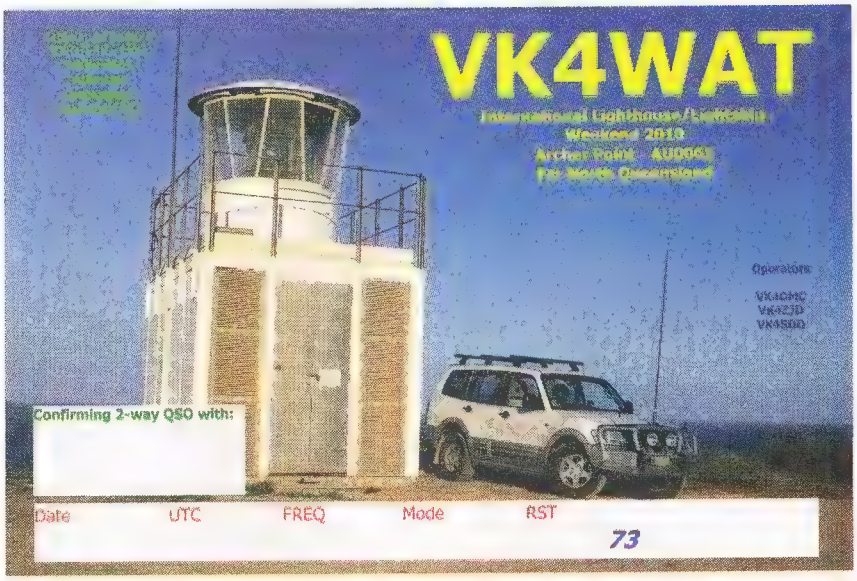
Members of the Tablelands Radio and Electronics Club Inc. (TREC) activated the Archer Point Lighthouse AU0065 for the 2010 ILLW. Archer Point is located some 200 km north of Cairns in Far North Queensland on a very isolated and exposed headland.

TREC members Stu VK4SDD, Paul VK4ZJD and Dale VK4DMC travelled up from the Atherton area, a 600 km round trip. Archer Point lighthouse being located at such an isolated location with no facilities available meant that we had to be totally self sufficient. Tents, camping gear, batteries and generators were the order of the day.

Antennas were erected on the Friday and VK4WAT, the TREC callsign, was on air at 0001 Zulu on Saturday morning.

Whilst erecting a portable mast the wind was so strong that it caused one of the aluminium poles to break allowing the vertical antenna to crash to the ground with a resounding thud. No damage to the antenna fortunately.

We set up two stations, one from a vehicle right next to the lighthouse and the other station a little way below the lighthouse in a slightly less windy location. Conditions proved to be very good on 20, 40 and 80 metres.



A total of 36 other lighthouse amateur radio stations were contacted around Australia, New Zealand and the United States of America. Lighthouse stations in every state of Australia were contacted.

We also worked many other amateur radio stations world-wide including ZS8M on Marion Island in the southern Indian Ocean, V44NEF in Nevus in the Caribbean, New Caledonia plus many other Australian and international amateur radio stations.

The Tableland Radio and Electronics Club has been established over 22 years and is based on the Atherton Tablelands inland from Cairns in Far North Queensland.

Thanks to all the stations who worked VK4WAT this year and sorry for mentioning our 28° temperatures, especially to the operators at Cape Leeuwin who shivered in only 3° temperatures.

We are looking forward to working ILLW again next year. **ar**

ILLW 2010

WICEN Tasmania at Point Home Lookout

Roger Nichols VK7ARN

WICEN Tasmania (South) VK7WCN headed to Tasmania's east coast for a new lighthouse weekend activation – Point Home Lookout.

This is a relatively recent light, built in 1971 to assist woodchip carriers entering Triabunna, and very similar to the more easily visited light at Cape Tourville near Coles Bay. The tower is 14 metres high and 57 metres above sea level, with a 36,000 candela light.

The lighthouse is hidden from view on the landward side by a low hill, so is seldom seen other than from the sea. Access involves crossing private property from the Triabunna woodchip mill road. The view from the light is outstanding, looking across Mercury Passage to Maria Island and, at night, the light on Ile du Nord off the northern tip of Maria.

Cedric VK7CL, Chris VK7FCDW, Garry VK7JGD, Roger VK7ARN and Ray VK7VKV, with harmonic Ben VK7FBGS, gathered in Triabunna and headed across the paddocks to set up stations at three locations around the lighthouse. With some dismay, and the odd expletive, we discovered S9 noise, thought at first to be emanating from a transformer on a pole 100 metres from the lighthouse. However, driving across the paddock to an alternative rocky knoll made no difference. Ray found the noise blanker on his Yaesu FT-897D coped reasonably well, so his station became the mainstay. Interestingly, the noise dropped off later in the day, so we assumed it was coming from the woodchip mill just over the hill.

Station equipment included a Yaesu FT-897D with SGC-237 Smartuner into a nine metre squid pole, two Icom IC-706MkIIG with AH4 tuners and nine metre squid poles and a Kenwood

Ray VK7VKV and Ben VK7FBGS setting up the squid pole. Photo by VK7FCDW.

Ray VK7VKV and Cedric VK7CL. Photo by VK7FCDW.

Maria Island across Mercury Passage lookipast th

TS- 130SE into a Ten-Tec ATU. The Kenwood had a choice of a five band trapped vertical and 90 metre longwire slung low in trees near the cliff edge. The preponderance of squid poles and Garry's vertical gave the Point the look of an echidna on a long leash in the form of Garry's longwire.

Come evening, Chris had to head off leaving the happy, but cold, campers with their two campervans and two tents. The weather was challenging for an activity consisting mainly of sitting around. Reasonably dry but cold and made more uncomfortable by the chill factor due to the strong wind.

Sunday dawned with a clear sky and welcome sunshine, but still with a fresh but lessening breeze keeping the felt temperature down. The heavy throb of diesels from the cray boats below made alarm clocks redundant. The bands were still busy but new lighthouse contacts were becoming few and far between. So, following a group call back on 80 metres after the WIA and regional broadcasts and an attention diversion to observe a pod of dolphins passing through Mercury Passage, we decided to do a leisurely pack up, take a light lunch and head off back across the paddocks, to return the landowner's key and to meet up in Orford for a final coffee, snack and vitamin D boost in the, by now, warm sun.

More photos of the weekend can be found at http://tas.wicen.org.au/Photo_pages/illw_2010.html

ar

The 'big picture' is on page 56 and the inside back cover.

Garry VK7JGD unloading his rig. Photo by Chris VK7FCDW

ooking past the camp Photo : Roger VK7ARN.

Garry VK7JGD, Chris VK7FCDW, Roger VK7ARN, Cedric VK7CL and Ray VK7VKV. Photo by Ben VK7FBGS.

ILLW 2010

SCARC at the unique Point Malcolm lighthouse in VK5

Graham Thomas VK5GCT

SCARC members activated a lighthouse reputed to be the only one of its kind in the Southern Hemisphere— it is a freshwater light.

CQ lighthouse, CQ lighthouse, CQ lighthouse, this is VK5ARC.

The Kenwood TS-440S crackled into life as four members of the South Coast Amateur Radio Club (SCARC) in South Australia activated the Point Malcolm lighthouse near Narrung.

Mal VK5MH, Mark VK5MWH, Steve VK5ZEO and Graham VK5GCT set up the field station at the reserve opposite the lighthouse on Saturday, 21 August, 2010 during rain showers.

The campsite at Point Malcolm.

Point Malcolm lighthouse is on the Narrows between Lake Alexandrina and Lake Albert. Built in 1878 to guide paddle steamer traffic it was extinguished in 1931, and replaced by an electric light which operates today for safety and recreational purposes. It is reputedly the only freshwater lighthouse in the southern hemisphere.

Access to the site is problematic due to landowner concerns, so the VK5ARC call-sign made it onto the airwaves just after midday. Steve's camper trailer and its awning provided the participants with shelter from the rain and wind.

The station consisted of a Kenwood TS-440S, homebrew tuner and G5RV antenna mounted on a pump-up mast some 14 metres in the air. A Yaesu FT-857

A view of the lighthouse, situated on the Narrows between Lake Alexandrina and Lake Albert.

connected via a three element 2 metre Yagi, 70 cm Yagi and squid pole made up the rest of the portable set up.

In response to our first call, ZL6LH at Cape Egmont light responded with a 5 and 9 signal report. This augured well as we proceeded to work the 20 and 40 metre bands through the afternoon and early evening. One highlight was a QSO with an R1 station in Antarctica.

Despite close-by high voltage power lines, the ambient noise level was almost non-existent. The weather also improved making the event very enjoyable. It was particularly noticeable that more VK stations were participating as the ILLW did not clash with the Remembrance Day contest weekend *(organisers please note)*.

As the sun sank, the temperature sank as well. Much warming fluid was needed to keep our jaws from freezing up.

Some problems were experienced tuning for the 80 metre band with a modification needed to the tuning circuit. Propagation was excellent with many stations making contact; some of these were repeats of earlier QSOs with lighthouses. Both two metres and 70 cm were available for local stations. At around 2200 hours local time, it was decided that a rest was in order.

As the sun rose and the temperature got a little better, ILLW calls began again around 0700 local time on 80 metres. This band quickly deteriorated and we once again worked the 40 and 20 metre bands. Although the morning

Three of the four operators at Point Malcolm were, from L to R, Mark VK5MWH, Steve VK5ZEO and Mal VK5MH.

sun shone brightly, the NNW wind made for very cool conditions. Some two metre simplex QSOs were made with VK5 stations adding to the broad coverage. All too soon it was time to make the last call before pulling down the temporary set-up. This was completed without fuss and we were soon headed back to our homes feeling very pleased with the event. Some 47 lighthouses/lightships made contact with VK5ARC/portable Point Malcolm.

In summary, SCARC made a total of 180 contacts. This consisted of: VK1 = 3; VK2 = 30; VK3 = 41; VK4 = 27; VK5 = 44; VK6 = 8; and VK7 6. DX contacts = 21.Our thanks to all who made the effort to make the event so memorable.

ar

B.A.R.G. Ballarat Amateur Radio Group Inc.

Inc. # 6953T ABN 44 247 200 143

VK3BML

HAMVENTION

on

Sunday, 24th October 2010

at

THE BALLARAT GREYHOUND RACING CLUB,

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Mail:
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Mail Centre,
BALLARAT VIC 3354

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(Under 15 yrs old free)

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Tea and coffee all day!

VK6news

Keith Bainbridge VK6RK

Having just returned from a wet week in Kalbarri, I am a little late writing the roundup this month, something that has been to my advantage it seems, as I have had several snippets from the various groups around the state sent in the past few days, so here we go.

First up unfortunately, from Cliff VK6LZ a notification of a silent key.

Sad news just received from Betty Fisher, the widow of Ron Fisher VK6RF, licensed since 1949, first in VK3 then VK6, who was just short of 82. He had been suffering with Alzheimer's for the past eight years. He had been in care for two years and passed away with pneumonia, on 1st of July 2010. The funeral has taken place at Pineroo on 7 July. He was a long time member of the WIA and WARG. His equipment was disposed of some time ago. Vale Ron.

73 Cliff.

News from Martin VK6ZMS: **HARG**

Perth has another APRS digipeater on air, VK6AHR-3 located at the Hills Amateur Radio Group in Lesmurdie. Ideally situated to cover the South East corner of the coastal plain the new digipeater will greatly enhance coverage around Perth. Initially it will run on a temporary antenna on HARG's roof but plans are under way to install a high gain collinear on the club's tower.

HARG also intend to interface a weather station in the transmissions. APRS traffic can be monitored on the internet by going to www.aprs.fi and centring the map on Perth.

The Hills Amateur Radio Group recently held the VK100WIA call sign with great success. Over 450 contacts were logged, the highlight being a pile-up into Europe on Saturday night July 31. The group was almost ready to pack it in for the evening when they gave 20 metres one last go. A station was heard calling CQ from Italy so the band was open. A spot was put on DX Summit and the resulting dogpile can be viewed on You-Tube.

http://www.youtube.com/user/torquelimited8115

Propagation was average on Sunday night, so Heath VK6TWO used the call sign on the D-STAR reflectors. Again this proved to be very popular and he stayed up late into Monday morning making contacts.

HARG managed to gain publicity in two local papers about the event and the fact the shack would be open. A number of visitors took the opportunity to see an amateur radio station first hand, with many expressing an interest in the hobby.

HARG are currently planning their next event: the WIA National Field Day in October.

(also see box on facing page)

Thanks Martin for the update and the picture of activity at the lighthouse, it looks as if it was fun.

Ham College had its AGM on 17th August and the following was received from Joanne Breeze.

All positions were declared vacant and a new committee was elected for 2010-2011. The new committee is:

President: Doug Bell

Secretary: Joanne Breeze

Treasurer: Neil Husk

Assistant Treasurer: Kevin Pestell

Education Officer: Neil Husk

Enrolment Officer: Kylea White

Thanks for the update Joanne. I hope Ham College continues its sterling work recruiting new amateurs into the fold.

JOTA/JOTI is rapidly approaching and I know several groups will be active assisting the Scouts at various locations around the State, please contact Bob VK6POP if you can help in any way.

Also coming up is a very busy Contest month, with the NCRG away at Muresk for the Oceania DX SSB contest and intense activity on other weekends of the month from the club premises in Whiteman Park.

They will also be hosting the Herne Hill Scout group for JOTA in the midst of all the contests. They also received a visit from Barry WD4MSM, who is living in Fremantle on a University exchange program, the first of many visits he assures us while he is here.

I was up in Tom Price recently and tried out the new 2 metre repeater VK6RTP. The coverage was excellent around the town and for a reasonable distance into the surrounding country side. Hopefully the new improved antenna system will extend that even further for the travellers passing through this beautiful part of the Pilbarra.

As I was there on a Wednesday during working hours, I was unable to drum up any of the locals for a contact. I was also in Karratha and Port Hedland the week before, with equal lack of success for a 2 metre contact. The amateur population up there is increasing with the transient workforce, so I am sure there will be plenty of activity soon.

The WIA National Field day is on Saturday 23rd October and I hope some of the State's groups will be participating, more details on the WIA website. Register your intent to participate on the website to enable events to be coordinated.

Finally for this month an update from Maarten VK6MP for the **Geraldton Amateur Radio Group:**

The Geraldton Amateur Radio Group had a bimonthly meeting on 08/8/2010.

During the meeting this new committee was elected, Chairman Maarten Plug VK6MP, Secretary/Treasurer Steve Wellington VK6FSWR and remaining again as Technical Equipment Officer Graham Drage VK6KAE. Maarten thanked outgoing Chairman Gordon Williams VK6IU for his many years service. Also without his excellent efforts, the Geraldton Amateur Radio Group more than likely would have folded many years ago.

There are many plans afoot for the Group. To start off with, we will be resurrecting repeater VK6ROO 146.775 MHz located on the CBH Elevator Building on the Geraldton Wharf. The EchoLink node VK6MP-L will be back on air shortly along with APRS and later, IRLP. We are looking to link repeater VK6RGN with VK6RNR at Northampton.

An APRS I-Gate has been established and a digipeater should be installed in the next few weeks. Some of our members now have TinyTrack4

trackers that have both position and messaging capability, so if in the area, keep an eye out for us.

For those interested in AIS (Automatic Identification System) for shipping, Rick VK6XLR has a node online. This is a receive-only system monitoring AIS data on 161.975 and 162.025 MHz. Traffic can be viewed at www.marinetraffic.com The system is a very effective indicator of tropospheric propagation on the West Coast. Best two days so far has displayed traffic from Albany to past Exmouth. That's some troppo!

73, Maarten Plug VK6MP

Chairman Geraldton Amateur Radio Group

I am delighted to see activity again from the Geraldton area. It has been quiet up there for some time and I was pleased to chat with GARG members at Hamfest this year and to see their enthusiasm.

That about wraps things up for this month's notes. Thanks for all the input and please keep it coming!

73 Keith VK6RK

vk6rk@wia.org.au

ar

City Lights

While some went remote coastal, other ILLW participants found a light on their doorstep.

HARG participated in the International Lighthouse Lightship Weekend, activating the North Mole Lighthouse in Fremantle AU0073 using the club's call sign VK6AHR.

Richard VK6BMW made his camper van available for use as the radio room. It doubled as the kitchen with Richard's cooking setting off the smoke alarm during a pile-up on 40 metres. The main antenna was a 9 metre long squid pole with an SCG auto tuner at the base. Radials were run over nearby rocks with one bared and thrown into the sea. This proved to be an excellent set up with strong signal reports received from Europe on 20 metres and the United States on 40 metres.

Power was provided by a number of solar cells and heavy duty batteries; the sun stayed out long enough to ensure a full charge. The Group also had a visitor from America call past, Barry WD4MSM, who jumped at the opportunity to have a go on the microphone making many overseas contacts. A great time was had by all members and HARG will be back next year.

Working in tight spots

I mentioned that I would be starting up a 'show and tell' for shack pictures. So to start it off, I have selected this submission from Lindsay VK6KID: Thanks Lindsay. I hope others will continue to submit their pictures as well.

Hi Keith, Pictured is my shack.

I am in an apartment so space is at a premium. I am using a G5RV on top of the building.

Equipment bottom to top:

Yaesu FT-2000

Left: Tram CB radio converted to 10 metres thru 50 watt linear amp.

Right: AV 1000 SWR Meter, QUAD audio amp, Aphex Studio Dominator (stereo MultiBand peak limiter), Soundcraft Spirit Mixer.

AKG 414 Condenser studio broadcast microphone, computer monitors with scope and FT-2000 controller software.

73 Lindsay Muggridge VK6KID. ar

Recent activities on the 137 kHz band in VK1 and VK2

Dale Hughes VK1DSH

Australian amateurs were granted a frequency allocation between 135.7 and 137.8 kHz in January 2009. This band offers a number of interesting challenges:

- As the wavelength is approximately 2200 m, any antenna that the average amateur can erect is very inefficient, resulting in very low radiated power.
- Most commercial equipment has very limited capability at LF, so much of the equipment used has to be home built.
- The band is very noisy due to interference from switch-mode power supplies, compact fluorescent lights and many other devices.
- For anything beyond local contacts, the operating modes and procedures are unlike that used on most of the other amateur bands.

However, despite these factors, or perhaps because of them, there is activity taking place in a number of locations at present.

The purpose of this article is to inform other interested people and to increase activity in this fascinating area of radio communications.

Arranging LF activities

Since approximately November, 2009 there have been fairly regular test transmissions from VK2AVQ and VK2AWD in Sydney and VK1SV and VK1DSH in Canberra, with a number of listeners in New Zealand also observing and hoping to receive signals. Due to the presently small number of people involved, these tests are usually arranged in advance via the Low Frequency Experimenters (lofexp) mailing list which is run by Steve VK2XV as part of his *DownUnder LF Experimenters' Group* website (http://au.groups.yahoo.com/group/lofexp/).

Transmission times, frequencies and modes are posted on the mailing list, as are signal reports which are usually posted shortly after the test transmission is complete. Aside from the advertised tests there are ad-hoc transmissions in the usual amateur way, but given the few likely listeners (at present) these tests generally go unreported.

Communication Modes

Due to high levels of noise (natural and man-made) and weak signal strengths for all but local contacts, long distance contacts use various types of slow, or very slow speed Morse code, either as conventional On-Off Keying, or some variation of Frequency Shift Keying (dots and dashes sent as different frequencies).

These modes are generically referred to as QRSS with a descriptor for the length of the signalling element (a 'dot') e.g. QRSS120

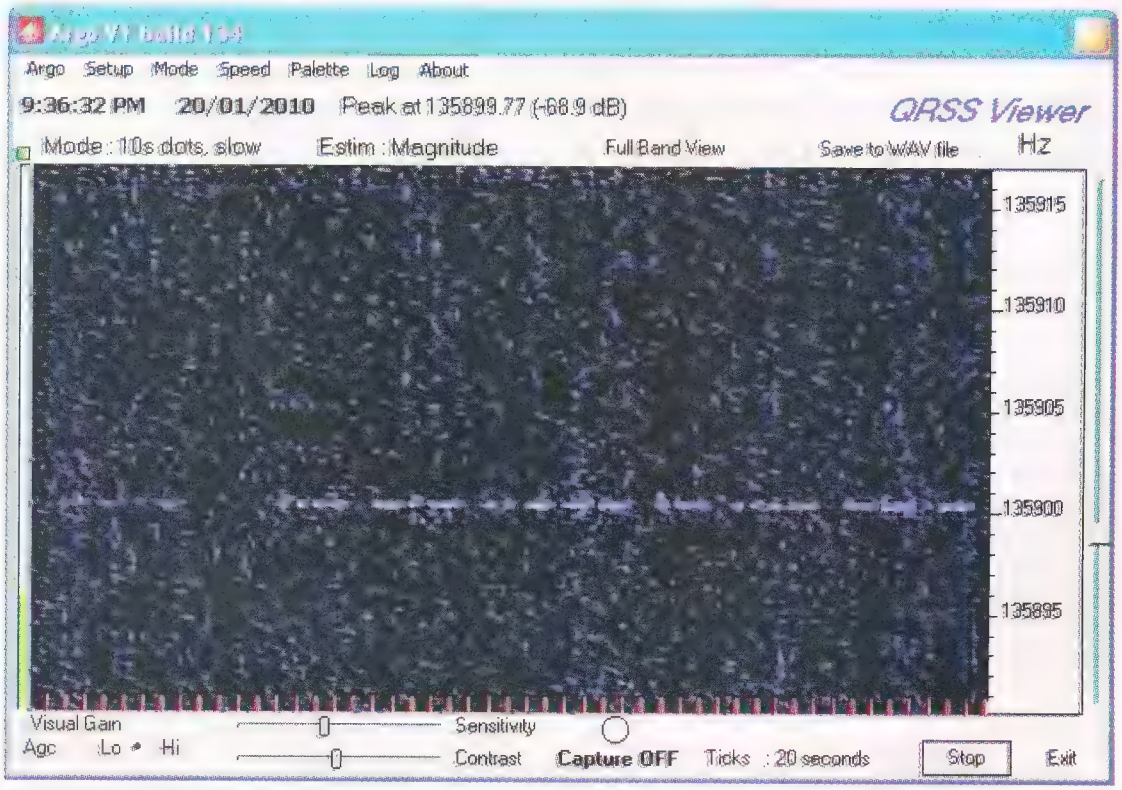

Figure 1: A QRSS CW signal received in Canberra from VK2AVQ using ARGO. The user has the option of calibrating ARGO so that it shows the actual transmit/receive frequency or the audio beat frequency.

translates to very slow speed CW using 120 second dot lengths.

The implication of the slow speed is that the receiver bandwidth can be very narrow (to maximise received signal to noise ratio) and that the message takes a long time to transmit.

Recent work by ZL1BPU to increase the amount of text sent in a given time has resulted in the introduction of CASTLE mode, where dots and dashes are sent at slightly different frequencies depending on their location within the actual code character. This improves signalling efficiency by approximately three times. See http://www.qsl.net/zl1bpu/MICRO/EXCITER/castle.htm for more details.

In all cases, a QRSS contact uses a computer to acquire and display the spectra of the received signal and the operator decodes the message by looking at the display. A typical example is shown in Figure 1.

The free available program called ARGO is generally used, although other packages exist. ARGO can be downloaded from the website of its author I2PHD: http://www.weaksignals.com/

Equipment used

A wide range of equipment can be used for LF activity, either all home made or a combination of home made converters and commercial equipment. A typical setup uses separate aerials for receive and transmit; receive aerials are usually either loops or active whips depending on the local electrical environment.

Transmit aerials are generally an 'inverted L' or 'T' type antenna at a height of about 10 m (or higher if possible) and as long as possible.

Drew Diamond VK3XU has published a number of construction articles in *AR* magazine for 137 kHz equipment and the RSGB book *LF today* (available through the WIA bookshop) contains a wealth of construction and operational information.

Results so far

Recently there have been a number of transmission tests which are very useful for determining and developing the capability of individual LF stations.

Signals have been successfully received in Canberra from Sydney stations and vice-versa.

Two-way QSOs have occurred between VK1SV and VK1DSH, between VK2AWD and VK1DSH and between VK2AVQ, VK2AWD and VK2XV. Various modes have been used, including standard CW.

On 21 March 2010 signals from VK1DSH in Canberra were received by stations in New Zealand. This is believed to be the first time that a transmission from VK1 on the 137 kHz LF band has been heard across the Tasman.

The transmission took place using QRSS120 CASTLE mode and Figure 2 shows the signal received by ZL2CA.

Conclusion

This short article was written to highlight the current 137 kHz activity known to the author in the VK1 and VK2 regions.

The 137 kHz band offers many interesting challenges and the opportunity to explore a part of the radio spectrum that has remained 'off limits' to amateurs since (more-or-less) the beginning of the radio age.

ar

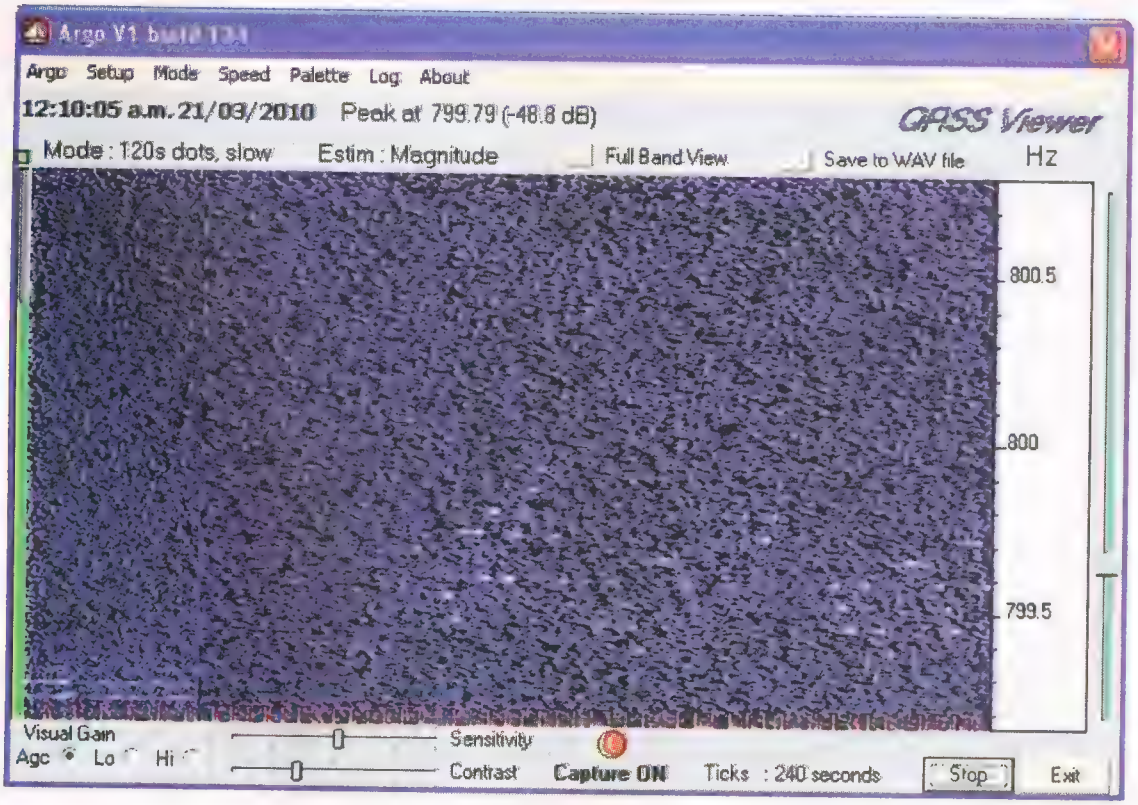

Figure 2: CASTLE mode signal received by ZL2CA of VK1DSH transmission. The estimated EIRP was 25 mW and the distance from VK1DSH to ZL2CA is approximately 2330 km. CASTLE is decoded by observing that individual dots are below the centre frequency of 799.65 Hz and dashes (same length as dots) are above 799.65 Hz; the frequency shift of each signal element is determined by its position within the code group for each character. Thus 'V' is collection of three lines below the centre and one line above. The actual frequency used for the test was 135.920 kHz.

DXnews & views

John Bazley VK4OQ
E-Mail: john.bazley@bigpond.com

I hope that you are ready to work the new countries which will have become operable from 10 October!

So onto other DX news.

Kevin VK4KEV (ex VK4FRAT) expects to be operating as VK0KEV from Macquarie Island somewhere around November and then for as much as 18 months. He will be active mostly on 40 and 20 m SSB and digital. He is awaiting formal approval and firm inward voyage dates. Currently, Kevin is operating as VK4KEV/VK7 in Hobart, Tasmania while undergoing training for the long stay on Macquarie.

The upcoming October 2010 DXpedition to Sable Island team have modified the dates of their trip. Also one of their team members has withdrawn due to work commitments. The new dates are expected to be October 21 to 29 and unfortunately the original organizer Murray WA4DAN will not be going. The four man team will be signing their own calls (CY0/AA4VK, CY0/AI5P, CY0/N0TG and CY0/VE1RGB). The team's website is www.cy0dxpedition.com and includes all QSL details.

Virginia DX Century Club members Tip KG4AS (N4SIA), Quint KG4QW (K4CQW), Stu KG4SS (K4MIL) and Bill KG4WV (W4WV) are heading to Guantanamo Bay. They will be arriving late on October 5th and leaving on October 19th. The group will operate on 160 through 6 metres as band conditions dictate and with CW, RTTY, and SSB. Due to a local noise source by the shack there might be limited activity on 160. QSL via the operator's home call.

Craig VK4LDX/VK8PDX will be holidaying on Fitzroy Island (OC-172) and QRV as VK4LDX/P from October 16 to 22. with expected activity on 40, 20 and 15 metres SSB, PSK and RTTY. This IOTA has not been on since 2003. He has a Web page at http://vk4ldxoc172.blogspot.com/

Pierre ZS8M (ZS1HF) reports that the ship that he supports when it is in port has now left, giving him some free time for amateur radio. The ship dropped off a team of 50 construction workers to complete the new base on Marion Island. The ship comes back in November to pick them up. Pierre says "ZS8M is back and operational again, but I need to watch my operating times as I don't want to create any problem with management." The SteppIR vertical will stay boxed until the weather improves enough for him to put it up, or he can put it up at the new base.

Bill N7OU is heading back to the Cook Islands. Plans are to operate again as E51NOU from Rarotonga (OC-013), South Cooks between October 18th and November 13th. He will be QRV in his spare time from his volunteer work. Bill will be running 100 watts into a vertical on 7 through 28 MHz. QSL via N7OU.

A multi-national team plans to go to Niue Island (ZK2) and then Norfolk Island (VK9N) during late November and early December. First it will be ZK2AA from 20 November to 3 December. Plans are to have four Europe focussed rigs with an emphasis on 1.8 through 10 MHz, as well as 17 and 24 MHz and CW and RTTY. Then they will be operating from Norfolk, no call mentioned, from 5-12 December, with the same focus and emphasis. They are planning a Web site. QSL via PA3LEO.

ARRL DXCC Entity ZD9 consists of the islands of Tristan da Cunha, Inaccessible, Middle, Nightingale, Stoltenhoff and Gough. Tristan da Cunha has a permanent population (200-300) and over the years several have been active ZD9s. The other islands are uninhabited. During 2009 there was no activity from ZD9. John ZS1LF (ex ZR1JON) is heading to Gough Island (AF-030) this September for a one year work assignment as the team leader and radio technician. For those who are participating in the CQ Magazine's CQ DX Field Award Gough Island is the only island located in the IE Field. This will be his second time to the remote island. He is brand new to HF and has no experience on HF. John plans to be QRV in his spare time as ZD9GI. Activity is not expected until after the *SA Agulhas* drops off the team and their supplies sometime in October. He will have a TS-480, an amplifier and dipoles. Plans are to operate on frequencies between 1.8 and 28 MHz, usually "after official working hours and weekends". Initially he will be on SSB only and then afterwards on the digital modes. ZS1A (ex ZS6JHS), Johan Sevenster, will be the QSL manager. His address is: 2 Roozeboom Str, de Bron, Bellville 7530, SOUTH AFRICA.

Iranian Amateur Radio operators EP2ES, EP3AG, EP3SMH, EP3HAM, EP3CQ and EP3DX, all members of the Iran Amateur Radio Club station EP3PTT, are currently active, says Col MM0NDX. Despite the fact that Iran is a member of the Universal Postal Union (UPU), Iranian DXers cannot redeem International Reply Coupons (IRCs) to Iranian postage and request US Dollars for direct QSL requests. Iran does not have a QSL bureau.

K5LBU (A25CF), K5ZOL (A25BI), KD5TAN (A25AN), I0ZY (A25ZY), IK1MDF (A25DF), IZ5MMB (A25MB) and W5SL (A25ASL) will be active from Botswana between 21 October and 4 November. QSL via home calls. They plan three stations on 160-10 metres (hopefully also on 6 m) and to participate in the CQ WW DX SSB Contest as A25HQ (QSL via K5LBU). Financial support to help with the expenses is gratefully accepted. The website is at www.qsl.net/a25-2010

Joe JA1LZR and Yutaka JQ2GYU will be active as JW/HB9LEY and JW/JQ2GYU from Svalbard on 10-14 October. They will operate CW and SSB with a low band focus as well as on 30, 17 and 12 metres. QSL for both via JQ2GYU, direct or bureau.

Andy ZC4VJ (G3ZB) has completed his work assignment at the UK Sovereign Bases on Cyprus and is expected back in the UK soon. He made some 66k QSOs while there.

Tom K7ZZ is making a micro-lite trip to Ascension Island. Look for ZD8ZZ (that is double zed) from October 6 through 19 on 160 through 10 metres on CW and SSB. Although bare foot, operations will be from near the top of Green Mountain (elevation 2300 feet (700 m)) overlooking the Atlantic. Antennas include a two element phased vertical array. QSL is via LOTW or direct to K7ZZ.

Finally for this month RI1FJ is now active from Franz Josef Land. Note, this is a new prefix, not a

typographical error. This is the former R1FJT station from 2006-2008. Operating is Eugene UA4RX. He is on a new one-year tour that started August 24th at the weather station on Heiss Island in FJL. He has been on 20 and 17 CW so far, typically between 0130- 02 Z and 09-12 Z. QSL via Eugene Chepur, P.O. Box 1122, Kaliningrad, 236019 RUSSIA.

Good luck in the pile-ups until next month.

Special thanks to the authors of *The Daily DX (W3UR), 425 DX News (I1JQJ) and QRZ.DX* for information appearing in this month's DX News & Views. For interested readers you can obtain from W3UR a free two-week trial of The Daily DX from www.dailydx.com/trial.htm

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YJ0VK

The YJ0VK team is now home, after almost six days of operation from Vanuatu, which finished on 2 September 2010.

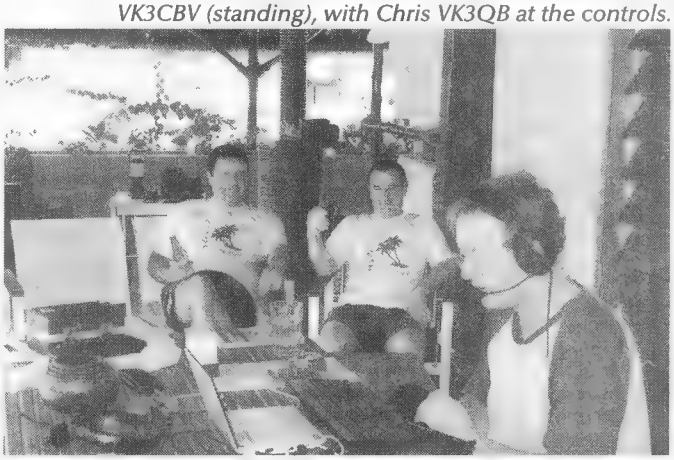
The team logged 3946 QSOs from 69 countries, with 2200 unique callsigns. The teams reports they were very happy, considering the very poor propagation.

They send a big thank you to the patient DXers out there who worked them.

They wished that "the conditions were kinder, especially into EU, but it was not to be. We did our best. 73 to all - see you next time!"

More details of the Expedition can be found at: http://yj0vk.vkham.com/

The YJ0VK team: Allan VK2CA, Luke VK3HJ and Brenton VK3CBV (standing), with Chris VK3QB at the controls.



Some people busy..... some people not?

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ALARA

ALARA 35TH birthday celebrations

The VK2 birthday luncheon was held on 24th July at the Winston Hills Guide Hall. The party was planned and prepared by Norma VK2YL and Frank VK2AKG and their daughters Lorraine VK2FICQ and Michelle VK2FMYL. The hall was decorated and a table was bursting with food.

I think they must have eaten well the following week for only four other people turned up. Karen VK2AKB and her OM Peter VK2EHQ, Dot VK2DB and OM John VK2ZOI. We had a good afternoon with Dot showing her photos of the Friedrichshafen Radio Meet and the Zeppelin Museum and Norma showing us the photos of the ALARA talk she gave at the WIA Centenary Convention in Canberra. Even though the numbers were low, we had good food, good company and a good chat. DianeVK2FDNE and a friend were coming from near Newcastle but got lost, so after three hours driving and two hours looking for the place, they stopped and ate the food they were bringing and went back home. Diane said they had a good afternoon together but it was just not what they expected! We are planning to hold another VK2 lunch meeting towards the end of the year and hope that more YLs and their OMs are able to attend. Dorothy Bishop VK2DB.

VK2 ALARA lunch: Norma VK2YL and her daughters are in the middle of the photo.

Congratulations to the VK2 members for initiating a get together for NSW ALARA members. I am sure the word will get around and numbers will increase. It is such a great way to catch up in person and communicate face to face.

VK3 held their ALARA birthday luncheon at Sunbury this year. Jenny VK5ANW/3 hosted together with Peter VK3RV who provided an appreciative audience with entertainment. 23 people attended and had a most enjoyable time. There was a generous amount of food including a special birthday cake. Those present included members of the Midland Radio Club, the Gippsland Gate Radio and Electronics Club, and the Eastern and Mountain District Radio Club. Jean VK3VIP brought along two visitors from New Zealand, Marlene who is sponsored by Jean, and her husband Laurie who were visiting Melbourne for a few days. Marlene a member of WARO informed us she was going to sit for her licence shortly after returning home. Margaret VK3FMAB.

22 attended the VK5 ALARA birthday luncheon – see the story on page 41 of the September issue of *AR*.

Snippets

Congratulations, ALARA operators managed 600 contacts when using the VK100WIA centenary callsign over the three day period they were assigned.

WARO (NZ) will celebrate their 50th anniversary in 2012. People might like to keep this in mind if planning a trip to New Zealand and would like to attend.....

The new callsign for Susan VK3LOV is now VK3UMM. Thanks Susan this is a nice easy one to remember.

In response to an earlier article which referred to business cards being used by a radio club to advertise their hobby suggestions have been received about other ways ALARA members can promote our organization.

Organisers of Club Field Days or Ham Fests can be asked to display notices or display hand-out Sheets with information about ALARA and who to contact to follow up an interest. Usually the refreshment side of things is XYL territory. So this could be encouraged within various clubs.

Shirley VK5YL reminds us that the ALARA conference station on EchoLink is on '0500 UTC on the fourth Thursday'. It is a good chance to catch up with other members.

Comments from Dot VK2DB (Editor ALARA Newsletter)

Last weekend I attended the Blue Mountains Winterfest and shared Judy VK2TJU's table having my ALARA cloth on one half and her AMSAT cloth on the other half. We had a good chat and I showed her and other interested viewers some of my photos of the YL Meet in Munich and my river cruise from Amsterdam to Budapest.

Judy popped outside with her antenna now and then to give demonstrations and answer questions about the amateur satellites. It did appear to me that YL numbers were a bit down this year.

VK3 ALARA birthday luncheon.

ALARA lights up

"Steadfast, serene, immovable, the same, Year after year, through all the silent night.

Burns on for evermore that quenchless flame.

Shines on that inextinguishable light"

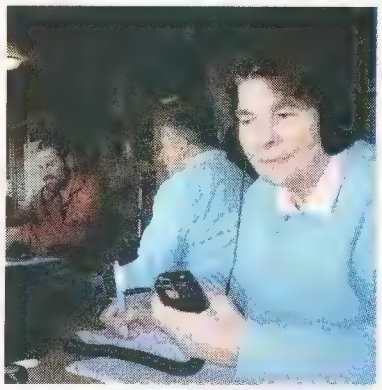
Ode to Lighthouses ....Henry Longfellow

The International Lighthouse Lightship Weekend came into being in 1997. It now coincides on the Sunday with the International Lighthouse Day which is an event organized by the International Association of Lighthouse Keepers whereby many world lighthouses will be open to the public for the day. This year 447 lighthouse locations were represented and 57 of these were Australian.

This event provides an opportunity for operators to have fun while making contact with as many amateur radio stations as possible. Each station's operators decided modes and bands. The basic objective is to promote public awareness of lighthouses and lightships and their need for preservation and restoration, to promote amateur radio and to foster international goodwill.

Eastern and Mountain District Radio Club

Eastern Mountain District Radio Club had members at two lighthouses. ALARA member Jean VK3VIP went to Cape Liptrap with several other members of the club.



Cape Liptrap: Jean VK3VIP manning the radio with some of the team.

Apart from erecting the antenna in poor weather, they remained cosy inside their accommodation. The operators made a total of 387 contacts; approximately 30% of these were DX.

(Editor's Note: I have been advised that this operation has been withdrawn from the ILLW list of activations this year, as apparently most of the operation occurred not at the lighthouse but approximately 5 km away at Bear Gully Cottages. Therefore the operation was not in compliance with the ILLW guidelines.)

Five EMDRC members attended the Cape Schanck lighthouse. The weather was quite tempestuous Friday and Saturday. Fortunately the accommodation was comfortable and apart from setting up the antennas, the operators remained inside during the worst weather. Sunday however, saw brilliant sunshine and blue skies. Altogether 90 contacts were made, including 22 lighthouses.

Gippsland Gate Radio and Electronics Club – Wilsons Promontory

Comments: Pat VK3OZ and Graeme VK3BXG

Perhaps one of the most adventurous ILLW participants was a group from the Gippsland Gate Radio and Electronics Club who walked into the lighthouse at Wilsons Promontory carrying all their equipment. This included ALARA member Pat VK3OZ, who had been training for some weeks for this event.

See the 'big picture' on the inside back cover.

"Seven of us departed for the lighthouse from Telegraph Saddle, just south of Tidal River at 09:00 on Friday 20th August. The weather was atrocious with gale force winds but we made good time which included a 30 minute lunch break along the way and arriving at the lighthouse at about 14:30 just as it started raining almost horizontal with the gale force wind. The accommodation was a much-renovated 150 year old light keeper's home – 4 bedrooms with bunk beds to bed-down 12 people.

Equipment we had back-packed in were two transceivers – an IC-706MkIIG and an IC-7000, two ATUs and two switch mode 240 volt AC to 12 volt DC power supplies. Although it was envisaged running only one HF station, the time and expense would have all been for nothing if there had been a failure with one item with a one-only set of equipment. But the extra transceiver later proved its worth for 2 metres SSB use.

For the mast, we chose to take and use a ten metre squid pole with the top three sections removed, bringing it back to a sturdier type of seven; bearing in mind it too has to be back-packed in and out. The mast was nylon cord guyed in the middle and top to keep it straight and the antenna, a coax and balun fed inverted vee dipole with clips for 80, 40 and 20 metres can then be hoisted up the mast.

Contact was made with 30 other lighthouses in Australia and New Zealand and over 180 home stations – well worth the effort. Pat VK3OZ made our CW contacts into New Zealand for the log. With the 2 metre beam mounted low down on the mast we also made contact with VK3EG, Point Hicks some 300 km over water to east north east. They were the only 2 metre contacts we made over the weekend.

By early Sunday morning the wind had dropped significantly, the sky was clear and the sun shining. The return journey was more pleasant although 18 km still needed to be covered. All seven members were glad of the training they had undertaken beforehand."

ar

Pat VK3OZ making contacts.

VK4news

Operating Portable in the Deep North

Mike Patterson VK4MIK and Ross Anderson VK4AQ

Contacts from Grassy Hill

TRG has an increasing record of involvement in the International Lighthouse Lightship Weekend (ILLW) with the Group having just completed our sixth year of operations from the Grassy Hill Lighthouse, just above the township of Cooktown.

Established in 1885 the light has operated pretty much continuously since. It is rather unique as the structure is of a tapering corrugated iron from top to bottom, a rather specialized process even by today's standards.

Our Group adopted this particular light as it has a proud record of helping mariners plot their way through the Great Barrier Reef and we also have several members whose livelihood depended on work on Cape York Peninsula or at sea around Cooktown.

Stan VK4MFA worked on many of the roads, Wilf VK4ZNZ worked for PMG servicing much of the area for many years, Alan VK4HBN was involved with stream flow work, Dave VK4FUY and Pat VK4MUY lived in Cooktown for several years, Ray VK4TFT still works in telecommunications in the Cape and Gulf region, Bill VK4WL lived and worked on the Cape and Torres Strait, Dennis VK4JDJ worked cattle and was involved in drilling operations over an extensive part of the Cape and Gulf district and Mike VK4MIK carried our hydrographic survey work on the Barrier Reef for about eight years.

The 'shack' on Grassy Hill 2010.

With this close regional connection it seems perfectly natural for TRG to be part of this wonderful event from this particular location.

Preparations for the ILLW commenced several months prior to the event with construction of new antennas, equipment updating and negotiations with the Cook Shire Council for access because of extensive upgrading of the road up to the light.

The group usually travels to Cooktown in convoy on the Friday morning prior and takes up residence in our regular motel thus ensuring a rest between radio shifts and allows

A view of Grassy Hill Lighthouse following recent road works.

ILLW Cooktown 2010 (L-R): Wayne VK4ARW, Wilf VK4ZNZ, Stan VK4MFA, Ross VK4AQ and XYL Bev, Mike VK4MIK (rear) and Billy VK4WL. (Absent Dave VK4FUY and Pat VK4MUY).

a break and hot shower after the strong winds and dust for which Grassy Hill is quite infamous.

Mirth and frivolity were the order of the evening on Friday with our usual BBQ supper. Our guests included Mayor Peter and XYL Sayah and half a dozen friendly Cooktown identities.

The famous TRG Goose Club followed and sufficient funds were raised to cover all our licences for the upcoming year. Dave FUY and his friends entertained us with a range of working model steam engines which provided a few light-hearted moments of anticipation before bedtime.

On the Saturday morning we started early and set up the pergola and wind breaks, antennas, batteries and solar panels plus generator for night lighting. A normal shift involves two operators rotating as operator and logger. Having 11 at the site this year certainly assisted in record breaking setting up and subsequent logistic support. We are indeed fortunate to have several XYLs supporting this annual venture.

The inverted vee, hoisted on a 12 metre mast worked reasonably well and withstood the very strong winds as it had been built to do. The Group is getting quite proficient in building wind resistant structures.

The station operated for in excess of 25 hours even though bands were not good at some of these times. VK4GHL logged in the order of 100 calls, some 25 of which were CW, and contact was made with about the same number of actual lighthouses. This was a pleasing result given that much of our time on 'the Hill' was spent with the large number of inquisitive visitors to the 'shack'.

This was a quite unexpected and a rather delightful extension to our usual laid back fun day. The big winner out of this, of course, was amateur radio. In our post event debrief it was estimated that we entertained at least 200 visitors. This even led to a bottle of port wine being sent up to the Group by a grateful tourist.

We also welcomed two amateurs in Russell VK3RJL and Sam VK2FMAS. Year 9 student Sam spent some time in the operating chair and was hopeful of a QSO with his grandfather in VK3 but conditions at the time were just not favourable for him although each knew the other was there.

Sam's mum, Shelly, was doing research work for her PhD in Cooktown and has assured us of a return visit next year. The road closure meant that visitors to the light were on foot this year which resulted in a keener scrutiny of the group's activities – a pleasant and rewarding experience. *During his visit to our site, the Mayor was moved to suggest we take on the additional role of tour guide during future ILLWs, hi.*

On Sunday afternoon the station was dismantled and we retired to the motel to debrief and rest prior to the four hour drive return trip on Monday morning. Motel bookings were made and approvals received from Council to operate from Grassy Hill Lighthouse again in 2011, so the well travelled and versatile TRG is not letting the grass grow under its feet.

The return to our home QTH involved unpacking, cleaning, maintaining and repacking for a quick turnaround for a trip to Mt Fox, west of Ingham and the site of Australia's last volcanic eruption.

Three days at the volcano

A DX venture to Mt Fox,west of Ingham, the site of Australia's last volcanic eruption

Ross VK4AQ, Bill VK4WL and Mike VK4MIK were joined by Vern VK4FVC and XYL Nell at the Mt Fox Cricket Club. Many amateurs would know that Mt Fox is the QTH of well known motor bike racing aficionado, Rob VK4ARQ. He and XYL Caroline were on hand to greet us with that warm hospitality so well known in country folk.

We arrived just after lunch and immediately set about getting the various tents and antennas up and rigs operating. It was great to have a variety of HF antennae ranging from trapped dipoles, inverted vees, long wire and squid pole vertical plus a small vertical to use on digital.

We operated in CW, SSB and digital modes on the usual Nets plus participated in some very worthwhile DX. The three days at Mt Fox were mainly social and Rob and Carolyn hosted a lovely BBQ for us during our visit. We were also able to meet the local primary school principal and enjoyed his company at the BBQ as well. A group of Jeep owners came up and bivouacked on Friday evening and we had a long discussion about amateur radio and 4WDing.

TRG enjoy their many and varied 'up country' trips as it provides the opportunity to explore new locations, maintain camping and bush cooking skills and, importantly, operate radio equipment under a range of differing conditions . Murphy is a regular visitor but our ability to

Ross VK4AQ, Vern VK4FVC, Mike VK4MIK and Billy VK4WL at Mount Fox.

overcome the challenges he throws our way will soon see him give up on us.

The opportunity to promote amateur radio is always uppermost in our minds and WIA brochures seem to be taken with interest by visitors to our operations.

Camaraderie and humour are the standout features of TRG activities and the only essential characteristic required for one of these trips is to have a hide as thick as that of a rhino.

Until next time 73 and good DX.

VK3news

Jim Linton VK3PC
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arv@amateurradio.com.au

Amateur Radio Victoria

Plenty to talk about this month. There is an update on VK3RAN, the announcement about special event callsign VK100GG for JOTA, and recording the passing of an old-old-timer.

Firstly, thanks to Tony Hambling VK3VTH for his support in the past and recent acceptance of a position as a Councillor for Amateur Radio Victoria.

Museum ship on air

The amateur station VK3RAN on HMAS Castlemaine, moored at Gem Pier in Williamstown, is being heard on air more often.

A small number of volunteers are operating it on board this retired 1942 Corvette/Minesweeper and have consolidated its return that began with the International Museum Weekend in July for the past two years.

Now added to the calendar is the new activity on ANZAC Day 25 April that encourages the use of amplitude modulated (AM) transmission. Our Event Coordinator Terry Murphy VK3UP and Michele Grant VK3FEAT put it on air this year.

Despite a high level local noise 113 stations were worked, three in the Australian capital territory, 40 in VK2, 34 VK3, 10 VK4, 16 VK6 and 10 VK7.

Amateur Radio Victoria has indicated its willingness to participate in the ANZAC Day event should it be held again.

More recently VK3RAN was back on air for the annual Historic Military Vehicles Display, 8 August, which attracts quite a crowd to the wheeled muster along the pier.

Promotional material including a poster leaflet and media release helped publicise the day. Terry VK3UP made 68 contacts and there were plenty of visitors on board learning about amateur radio.

Until now VK3RAN had been operating from the ship's bridge. Now the warship radio room has been cleared and it will be used in future. A restored Navy B40 radio receiver is being installed and an AM transmitter will join it later.

Two display boards are being created, one explaining the radio station and the other is as a show-board of the incoming QSL cards received by VK3RAN.

While on the subject of QSLs, full colour VK3RAN cards have been printed courtesy of the Maritime Trust of Australia which, through volunteers, maintains the museum ship.

Girl Guides Australia Centenary

Amateur Radio Victoria is proudly supporting this milestone by putting on air later this month the special event callsign VK100GG, already being dubbed the 'sister callsign' to VK100WIA issued for the WIA Centenary.

Both callsigns will be on air for JOTA. VK100WIA is rostered to the Scout Radio Electronics Service Unit on the Saturday (UTC) and then it switches to the Eastern Zone Amateur Radio Club on Sunday. VK100GG is keen to make contact with both, and who knows it might even be able to qualify for the WIA Centenary Award.

Our Event Coordinator, Terry Murphy VK3UP, has attended several planning meetings with the organisers of Girl Guides Association. More details about VK100GG will be announced soon.

Alf Chandler exVK3LC (SK)

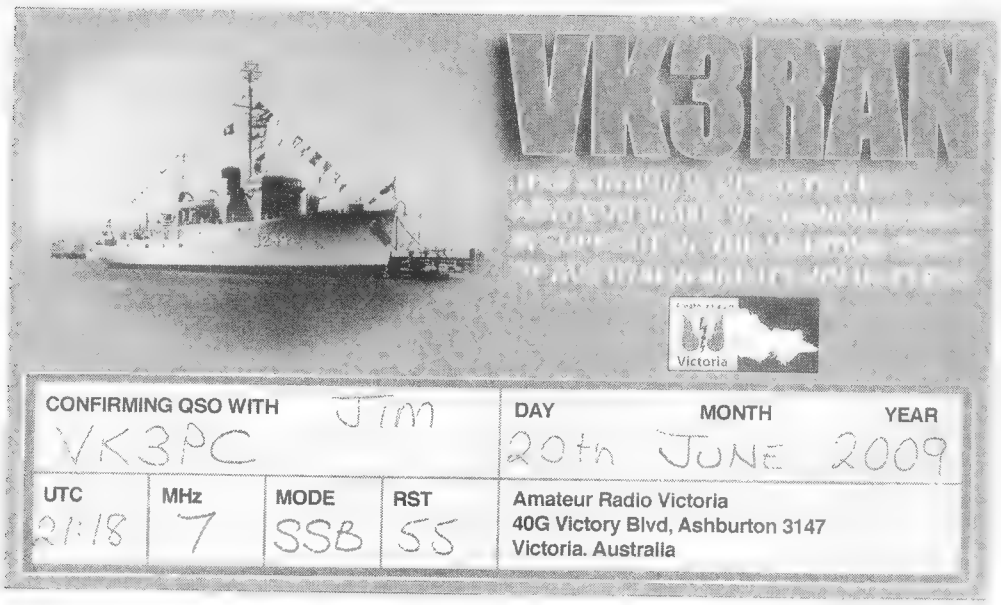
It is with deep sadness that we learn of the passing of Alf Chandler at the age of 105.

Alf, who lived his final years in a care facility, celebrated his 105th birthday on 1 June with family and friends and said, "I have lived a very happy life. The secret is not being sad at any time, never be sad."

He was predeceased by his wife Elise for a quarter of century in May this year. During his student years at Melbourne's Scotch College, he discovered wireless and that became a life-long passion.

Well known for his contributions to the WIA, both Federal and Victorian – an Honorary Life Member of both organisations, and loyal member and elder statesman of the Moorabbin & District Radio Club. VK3LC the 'Ripple from the South' is now a silent key.

Rest in Peace Alf. You were a gentleman, a long time carer, quiet achiever, and gave inspiration to many.



Contests

Craig Edwards VK8PDX
vk8pdx@yahoo.com.au

CONTEST CALENDAR

October	**2-3**	**Oceania DX Contest**	**SSB**
	9-10	**Oceania DX Contest**	**CW**
	9-10	Scandinavian Activity Contest	SSB
	16-17	Worked All Germany Contest	CW & SSB
	23	**WIA National Field Day**	**All**
	30-31	**CQWW DX Contest**	**SSB**
November	6-7	Ukrainian DX Contest	CW & SSB
	13-14	WAE DX Contest	RTTY
	13-14	Japan International DX Contest	SSB
	20-21	**Spring VHF/UHF Field Day**	**CW & Phone**
	27-28	**CQWW DX Contest**	**CW**

This is clearly my favourite contesting month of the year. We have Oceania at the start and then CQ World Wide SSB at the end. I have also managed to squeeze in a holiday DXpedition on October 16-22 to Fitzroy Island IOTA OC-172. So it should be a great month.

2010 CQ World Wide Contest Rules

At the time this column had to be submitted, the rules for the CQ World Wide Contest still had not been published. So visit www.cqww.com to get the rules. This year's grand event will be starting on October 30 at 0000 UTC and goes for 48 hours through to 2359 UTC on October 31. I have already applied for 48 hours family leave to remove myself from the real world and stay in the shack and transform into sleep deprived zombie mode. It is a reasonable assumption that a sick day from work will follow, especially if 10 m is open to North America in the last couple of hours of the event!

To help prepare for this year's event by studying how other competitors went last year, you can view everyone's Cabrillo log who submitted an entry for the 2009 CQWW at www.cqww.com/cq-ww-ssb-2009.htm

2010 80 metres VK/ trans-Tasman Contest results

The brief results are in the table below.

The full report is at www.wia.org.au/members/contests/transtasman/

80 metre Trophy	**VK7VKV**	**Vince Henderson and Ray Smith**	
Phone			
1st	VK7VKV (multi-op)	2562	Vince Henderson and Ray Smith
2nd	VK3FRC (multi-op)	2497	Frankston and Mornington Peninsular ARC
3rd	VK3KID (multi-op)	2287	Sherbrooke Community School R.C.
4th	VK2WJD/QRP	2060	Lindsay Murphy
5th	VK7FWAY	2011	Wayne Hays
6th	ZL4AA (multi-op)	1928	Otago Branch 30, NZART.
QRP Phone			
1st	VK2WJD	2060	Lindsay Murphy
2nd	ZL2AYZ	1527	
3rd	VK2IG	1473	Mike Dower (ex VK2ENG)
Foundation Licensee Phone			
1st	VK7FWAY	2011	Wayne Hays
Multi-Operator Phone			
1st	VK7VKV	2562	Vince Henderson and Ray Smith
ZL Phone			
1st	ZL4AA	1928	Otago Branch 30, NZART.

2010 80 metres VK/ trans-Tasman Contest results

2010 160 metres VK/ trans-Tasman Contest results

The full report is at www.wia.org.au/members/contests/transtasman/

160 metres Trophy VK3FRC Frankston and Mornington Peninsular ARC (Roy Seabridge VK3GB and the team)

Phone

VK3FRC (multi-op) 1156 F.A.M.P.A.R.C

VK7VH (multi-op) 1141 Vince Henderson and Ray Smith

VK2AOA (multi-op) 927 Orange and District A.R.C

VK2CU 849 Justin Lavery

VK2MA (multi-op) 690 Hornsby and District A.R.C.

QRP Phone

VK2IG 583 Mike Dower

ZL Phone

ZL4R	605	Ron Falconer

Multi-operator Phone

VK3FRC	1156	F.A.M.P.A.R.C.
VK7VH and Ray Smith	1141	Vince Henderson
VK2AOA A.R.C	927	Orange and District

Highest Aggregate Score for 80 metres + 160 metres: VK7VH

Worked All Europe RTTY DX Contest

This prestigious event starts on Saturday November 13 and finishes 48 hours later on Sunday November 14 2359 UTC. Due to the various intricacies in the rules, for example QTCs and off times etc, it is best to have a look at www.darc.de/referate/dx/contest/waedc/en/rules/

Scandinavian Activity Contest - SSB

I found that this contest last year heralded the beginning of the short path propagation into Europe on 20 m and it lasted right through until early December. So fingers crossed this will be a fun event again. It begins Saturday October 9 at 1200 UTC and finishes 1200 UTC Sunday October 10. For all the rules visit www.sactest.net/

SPRING VHF-UHF FIELD DAY 2010 Rules

Contest manager: John Martin VK3KM

The rules for this Field Day are the same as for the Winter Field Day last June.

I have received a query about the right contest category for club station operating from its clubrooms (i.e. from the "home" location of the club callsign). Does this qualify as a portable station?

According to the rules, a station is portable only if all of its equipment is transported to a place which is not the normal location of any amateur station. But this would disallow anyone from setting up a portable station at club premises, even if they did not make use of equipment that was already installed at the site. So I think the most suitable ruling is this: if a station makes any use of equipment or antennas that were previously installed at the site, that station would have to enter the home station section. If the equipment and antennas used for the Field Day are brought to the site, the station qualifies as being portable.

Dates: Saturday and Sunday 20 and 21 November 2010

Duration in all call areas other than VK6: 0100 UTC Saturday to 0200 UTC Sunday.

Duration in VK6 only: 0400 UTC Saturday to 0400 UTC Sunday.

Please note that there is now a 3 hour difference between the eastern states and Western Australia, because daylight saving time no longer applies in WA.

Sections

A: Portable station, single operator, 24 hours.

B: Portable station, single operator, 8 hours.

C: Portable station, multiple operator, 24 hours.

D: Portable station, multiple operator, 8 hours.

E: Home station, 24 hours.

F: Rover station, 24 hours.

Operating periods: Stations entering the 8 hour sections may operate for more than 8 hours, and nominate which 8 hour period they wish to claim for scoring purposes.

Entering more than one section: If a portable station operates for more than 8 hours, it may enter both the 24 hour and 8 hour sections. If the winner of a 24 hour portable section has also entered the corresponding 8 hour section, his log will be excluded from the 8 hour section.

If a portable or rover station spends part of the contest period operating from his home station, he may also enter the home station section.

Two operators: If two operators set up a joint station with shared equipment, they may choose to enter Section A or B as separate stations under their own callsigns, or Section C or D under a single callsign. If they enter Section A or B, they may not claim contacts with each other.

Multi-operator stations: Portable stations with more than two operators must enter Section C or D. Operators of stations in Section C or D may not make contest exchanges using callsigns other than the club or group callsign.

Rover stations: The Rover section is for all portable or mobile stations that operate from more than two locator squares or change locator squares more than twice.

General Rules

One callsign per station. Operation may be from any location. A station is portable only if all of its equipment is transported to a place which is not the normal location of any amateur station. Portable stations may change location during the Field Day provided the station is dismantled and reassembled each time it moves. You may work stations within your own locator square. Repeater, satellite and crossband contacts are not permitted

No contest operation is allowed below 50.150 MHz. Recognised DX calling frequencies must not be used for contest activity. Suggested procedure is to call on .150 on each band, and QSY up to make the contest exchange.

Contest Exchange

RS (or RST) reports, a serial number, and your four digit Maidenhead locator. The Maidenhead locator is optional if it has already been exchanged in a previous contact during the Field Day and neither station has moved since then.

Repeat Contacts

Stations may be worked again on each band after three hours. If either station is moved to a new location in a different locator square, repeat contacts may be made immediately. If the station moves back into the previous locator square, the three hour limit still applies to stations worked from that square.

Logs

Logs should cover the entire operating period and include the following for each contact: UTC time; frequency; station worked; serial numbers and locator numbers exchanged.

Scoring

For each band, score 10 points for each 4 digit locator square in which your station operates, plus 10 points for each locator square worked, plus 1 point per contact. Multiply the total by the band multiplier as follows:

6 m	2 m	70 cm	23 cm	Higher
x 1	x 3	x 5	x 8	x 10

Then total the scores for all bands.

Cover Sheet

The cover sheet should contain the names and callsigns of all operators; postal address; station location and Maidenhead locator; the section(s) entered; the scoring table; and a signed declaration that the contest manager's decision will be accepted as final.

Please use the format at foot of this article for your scoring table. In this example the operator has operated from one locator and worked four locators on each band:

A blank cover sheet, with scoring table, is available on the Field Day page of the WIA web site.

Entries

Paper logs may be posted to the Manager, VHF-UHF Field Day, 3 Vernal Avenue, Mitcham, Vic 3132. Electronic logs can be e-mailed to vhf-contests@wia.org.au. Acceptable log formats include: ASCII text, RTF, DOC, DOCX, XLS, MDB, PDF, or any Open Document format. Logs must be received by Monday, 7 December 2010. Early logs would be appreciated.

Band	Locators Activated	+	Locators Worked	+	QSOs	x	Multiplier	=	Band Total
	(10 points each)	(10	(1 point each)						
6 m	10	+	40	+	40	x	1	=	90
2 m	10	+	40	+	30	x	3	=	240
70 cm	10	+	40	+	20	x	5	=	350
etc.									
Overall Total								=	680

Scoring Table Format

FIELD DAY WEB SITE

http://www.wia.org.au/members/contests/vhfuhf/

This site includes the rules for the next Field Day, rules and results of all past VHF-UHF Field Days, cover sheets and scoring tables, and other information.

Special 2010 Field Day Cumulative Certificate

A reminder - special certificates will be awarded in December 2010 to the entrants who have participated in all three 2010 Field Days. To be eligible you must operate under the same callsign in all three Field Days.

Deadline for November issue: September 30 to vk4ldx@yahoo.com.au

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VK2news

Tim Mills VK2ZTM

vk2notes@arnsw.org.au

The **Central Coast ARC** have confirmed the date of next year's Field Day – Sunday 27 February 2011 at the current venue, the Wyong Race Course, advises Ray VK2HAY. The Club has also changed the name of the event – it will be now be the Central Coast Hamfest. Ray goes on to say that the aim is to make the Hamfest bigger, brighter and more enjoyable for all patrons. Check out the CCARC website for more details. You can contact Ray by phone 02 4325 2182.

In August the **Summerland ARC** held their SARCFEST at their Richmond Hill club rooms with about 80 attending on a fine winters day. Also in August the **Blue Mountains ARC** held their WINTERFEST, also on a fine winter's day with their attendance exceeding 225. Both clubs have pictorial coverage of the events on their web sites.

Also last August Pierce Healy VK2APQ celebrated his 99th birthday. Pierce has been licensed for over 70 years, in part of which he was a member of the NSW Division Council and served in many roles including those of President and Federal Councillor. For many years he wrote the Amateur Radio notes in Radio and Hobbies / Electronics Australia.

In late August the **Fishers Ghost ARC** conducted an open day at the Cataract Scout Park where they maintain the permanent Amateur Radio facilities of Scouts NSW. Besides the radio shack - the site has three 22 metre high towers for yagis on 40 and 20 metres, a 20/15/10 tribander along with an 80 metre delta loop and various dipoles. The club hold their meeting on the last Wednesday evening of the month at Campbelltown locations. They also conduct regular Licence assessments. Check out www.fgarc.org

Some of the VK2 clubs who took part in the Lighthouse weekend included **Manly Warringah RS** at the Barrenjoey Lighthouse at Palm Beach. **Waverley ARS** at Macquarie Light in Vaucluse. **Oxley Region ARC** at Tacking Point Lighthouse in Port Macquarie. **Summerland ARC** activated Point Danger, Cape Byron, Ballina and Evans Head. **Mid North Coast ARG** went to Yamba Lighthouse.

The **Hellenic ARA** meet on the last Tuesday evening at the St. George Sailing Club in Sans Souci when they activate the club station VK2CL. In August they operated from Montague Island under the call VI2MI reports President Tommy VK2IR. [0413 005 511] Web site www.haraoa.com

WICEN NSW have the Hawkesbury Canoe Classic over night 23- 24 October where they are always in need of operators for the various check points along the river. Also the annual search for the missing aircraft on the weekend of 16 -17 October. There is the Bushwalkers' first aid course this month – check www.bwrs.org.au In November there is the Fitz's Challenge bike ride in the ACT - 7 November and the National Capital Rally on 20 November. On 11 December Rallye des Femme, also in the ACT. WICEN always seeks support and these events are an opportunity for the Amateur Service to give something back to the community. The duty operator 0408 397 217. The web site www.nsw.wicen.org.au The WICEN Management Committee conduct some of their meetings at the VK2WI Dural site.

The **IPS Radio and Space Services** conducted their annual HF Radio Propagation course in Sydney last month. This course is conducted at other venues throughout the country during the year and the website is www.ips.gov.au/ Products and Services/2/2/

The **Liverpool and District ARC** have monthly meetings on the second Wednesday and project days at various locations. Along with Fishers Ghost ARC, they hold Foundation courses. Details from the Secretary Garry VK2BR on 0427 063 553 or email vk2tsr@bigpond.com

The **Hunter Radio Group** meet on the second Friday evening – except January, July and December – at the NBN TV Studios, Mosbri Crescent, Newcastle, starting at 8 pm. They provide a Monday evening news net – VK2AWX - at 1930 hours from early February until early December with highlights from the Sunday sessions and local news.

The **Oxley Region ARC** meet at the SES building in Central Road, Port Macquarie with the monthly meeting on the first Saturday at 1400 and an informal gathering on a Friday evening. Currently this is the fourth but consideration is being given to changing to another Friday to provide a better spacing between gatherings. They conduct training courses and assessments when there are sufficient registrations. Contact via mail to P. O. Box 712 Port Macquarie 2444 or the web site www.orarc.org

Do not forget **JOTA** this month. VK2WI will transmit any opening address at 1300 hours Saturday on the usual broadcast frequencies. Would those hosting operations with their local Scout and Guide groups advise VK2WI News at news@arnsw.org.au of your locations and schedule so that you may gain assistance and publicity etc.

In last month's notes **ARNSW** made a request for photos of the former NSW Division properties. A typo crept in for Atchison Street – 1959 to 1982 – Its should have been 'Wireless Institute Centre', not Amateur Radio House - which was the name of the later Harris Park property – 1982 to 2006 -. The new building at Dural has been named 'The Centenary Building'.

The first Secretary of the Wireless Institute of NSW – in 1910 - was Wally Hannam (1885 to 1965)(final call VK2AXH) and research is being carried out into his history and background. Various sources – Amateur Radio magazine, old Callbooks, Newspaper archives and his involvement with [Sir] Douglas Mawson in the 1911 – 1914 Antarctic expedition have answered most questions. What is still to be sourced is whether he had any family – his Obituary – AR June 1965 – only refers to 'relatives'. If anyone can assist, or add material, please email news@arnsw.org.au or telephone the office 02 9651 1490 and leave a message. Thanks. These printed sources have made sure that some of the history has been retained.

Three VK2 clubs have VK100WIA slots in this final month. St.George 5th to 7th; Chifley 20th to 22nd and Westlakes 29th to 31st.

The November ARNSW Trash & Treasure [28th] and events were still in the planning stages when these notes were

Spotlight on **SWL**

Robin Harwood VK7RH

Spring has arrived here and it is much better listening on the bands. It has taken so long for propagation to improve and this has accelerated the decline of major international broadcasters to finally leave HF. The VOA is scheduled to close the remaining Greenville HF complex at the end of this month. There is still a remote possibility that the American Congress could overturn the closure .The VOA and their parent body, the IBB, will continue with senders outside the continental United States.

Hungary also looks as if they finally have left shortwave. They closed their senders and started relaying from Germany, yet this too may have ended. I would not be surprised that there could be other disappearances

These departures on shortwave have allowed reception of smaller domestic stations and senders who have been masked by the major players. DXers Worldwide are reporting that Brazilian signals are being observed at quite good signal levels. I have never heard any Brazilians here in Tasmania nor worked any. I recollect one of the radio pioneers telling me sometime back that for some reason he could not hear them either.

I have received an email telling me that Radio St. Helena will be operating again this year. It will be on 11092.5 and on USB. The date will now be in October and not November. Here are the details:

Saint Helena.

Radio St. Helena Day 2010: Date, Times, and Targets

RSD 2010 will be on Saturday, 9 October 2010.

Target Region	Times (UT)	Beam Heading
Europe	1900 - 2030 UT	10 degrees
India	2030 - 2130 UT	70 degrees
Japan	2130 - 2300 UT	50 degrees
North America	2300 - 0030 UT	310 degrees

Gary Walters, Station Manager of Radio St. Helena, has confirmed the above information, and, as usual, Derek Richards will operate the RSD shortwave transmitter. *There will be a special email-address exclusively for the evening of RSD 2010. As soon as Gary sets up this special email account, we will publish the account name. The RSD 2010 QSL cards are being sponsored by the Danish ShortWave Club International. Reception reports for RSD 2010 should be sent with sufficient return postage to RSH using the special Airmail address via Ascension and the United Kingdom - exactly the same procedure as for the RSD 2009 reception reports. ALL mail to RSH should use this procedure.*

The sunspot minimum between sunspot cycles 23 and 24 is the longest in history - much to the dismay of shortwave listeners everywhere. This minimum has lasted since 2007 and is still ongoing. There are not very many sunspots to "help" propagation, and there is no real sign of significant change. The UTC times for broadcasting to the various target area have been very carefully selected to have the very best chance of good reception in each area. Also, we need to have the RSD broadcasts one after the other. After RSD 2009, it was decided to change the times somewhat and to move RSD from November to October. RSH hopes that everyone around the world has excellent reception conditions during RSD 2010 and is looking forward to your emails and also, if possible, to your telephone calls.

With very best 73, Gary Walters, Station Manager of Radio St. Helena.

This is on our local Sunday morning and I have not heard it direct but "cheated" by listening via remote internet receivers, a commonplace practice now. The sender is only a kilowatt and DXers donated a beam antenna.

October is also when the Northern Hemisphere reverts back to Standard Time and some Southern Hemisphere countries advance their clocks. Dates do vary with the Europeans changing back on the last Sunday, that is the 31st. North America reverts on 7 November. NSW, Victoria, SA and Tasmania Advance on 4 October. The NT, Queensland and WA do not have DST although the latter did again experiment with it for two years. NZ commenced DST on the 26th of last month.

The Commonwealth Games commence on 3 October and run through to the 14 October and are held in New Delhi. I do expect that this will give an opportunity to hear Indian shortwave signals particularly on the tropical bands. Also note that the Australian cricketers are scheduled to play in India in October, prior to the upcoming Ashes tour.

Robin L. Harwood VK7RH

vk7rh@wia.org.au

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VK2news continued

prepared. Work is still proceeding with unpacking several hundred boxes from storage and setting up the ARNSW library and other facility at Dural. Unearthed are some copies of the NSW Division Education Service publications. Titles found so far included 500 Questions for AOCP Candidates; 1000 Questions for Novice Licence Candidates; 100 Basic Electronic Projects; Novice Electronics and Learning Morse Code. There have been inquiries in recent times about these publications and if they were still available. In future notes, advice will be given as to availability. In the meantime unpacking continues.

73 – Tim VK2ZTM.

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This hamad may be of special interest to North Coast Amateurs around Forster

HELP WANTED to finish building my VK5JST aerial analyser kit. Surgery has left me visually impaired to the extent that I can no longer work on the PCB and the rest of the project. I am happy to meet all costs of an experienced kit builder.

Contact John Bennett VK2SIG/VK3ZA on email macben2@bigpond.com

Jamboree on the Air 2010

Bob Bristow VK6POP

JOTA-JOTI Co-ordinator, Scouts Australia

The Jamboree on the Air, or JOTA, is on Friday 15th to Sunday 17th October. Around 500,000 scouts around the world take part in this, the largest annual Scout event.

JOTA begins at midnight Friday, local time, and continues to midnight Sunday, local time. JOTI, the Jamboree on the Internet, runs parallel to JOTA, and is often run alongside JOTA as a joint activity.

Theme

The theme for Jamboree on the Air 2010 is directly related to article 12 of the Convention of the Rights of the Child, 'the Right to be Heard'. The theme is linked to the 20th anniversary of the Convention.

How is article 12, the Right to be Heard, linked to the Jamboree on the Air and the Internet? Scouts and Guides in many, but not all, countries have the permission to speak directly over amateur radio, and have access to the Internet. This greatly enhances their experience of JOTA-JOTI: a free and direct exchange of ideas between Scouts and Guides of all nations, helping them to get a feeling and understanding of other cultures.

Where to find information

Information about JOTA-JOTI, including information for amateur operators, can be found at www.international.scouts.com.au . Follow the menu to JOTA-JOTI. I can be contacted by email at jota.joti@scouts.com.au

This year, we have developed a resource kit for JOTA-JOTI. Details on the Scouts Australia website.

Registration

All Scout and Guide groups and individuals may register at www.jotajoti.org – registration at this website has many benefits for groups as well as providing important information about the event to the organisers.

Scout/Guide activity

JOTA-JOTI is a Scout and Guide activity that is conducted by Scouts and Guides with the assistance of amateur radio operators and others. It is the responsibility of Scout and Guide Leaders to provide a venue, provide for the comfort and sustenance of those helping, and to provide an interesting program of activities to keep young people active and interested.

Working With Children

For those States where Working With Children laws apply, and depending on the arrangements for the activity, helpers may have to obtain the WWC card (or State/Territory equivalent).

You should check with the Scout or Guide Leaders early (you should have done it before October) and apply. This is the law of your State or Territory, and not something made up by the Scout or Guide Associations.

To all amateur operators, to those who help directly, those who lend equipment, give advice and so on, and to those who stay clear of the bands to make room for JOTA, on behalf of Scouts Australia, I offer my thanks and gratitude. I hope it is a rewarding experience for you and the Scouts. **ar**

VK4news

VK4 - QTC

TREC (Tablelands Radio and Electronics Club)—VK4TL

Members and friends gathered together recently to celebrate the 80th birthday of Club President John Roberts VK4TL. Born in Wales in 1930, John developed an interest in radio at an early age, firstly with crystal sets and then early transmitting gear.

John has held the callsigns GW3IVS, VS6CW, VQ4GX, VQ3GX, VQ1SSB (ex Op of ZB2A) and VK4TL.

News items for this page.
"War and Peace" scripts not necessary, just a basic story of recent Club activities with pictures if available.

Please remember the deadlines for submitting articles.

Apology

In a previous edition of AR magazine, I misquoted the callsign of the Bundaberg Amateur Radio Club's new repeater at Mt. Watalgan. It is of course VK4RBW. Apologies to all concerned.

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VK4TL at the microphone recently and working at a MarconiSW-8 circa 1950 at Gibraltar

VHF/UHF An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

Even in the depths of the cold months of winter, there is still plenty of activity on the VHF bands – if you know where to look. Rob VK3MQ reports on various regular happenings in the Melbourne area:

We have had a steady response to the 150 net (144.150 on Wednesday evening at 2030 VK3 time) even through the darkest months of winter. About 7-10 stations participate each week and even the original net controller – Robbie VK3EK surfaces occasionally. Ballarat is well represented by Ian VK3AXH, Ian VK3IDL and Craig VK3CMC. City stations: John VK3ACA, John VK3BLX, Chris VK3KIH, Les VK3SL, Ian VK3TB, Peter VK3TPR and Alan VK3XPD. Gippsland: George VK3HV, Jim VK3II and David VK3AUU.

Co-controller Mike VK3KH has been busy with work, so he does not always make the net. But when he is in the control seat Chris VK2DO, Leigh VK2KRR, Colin VK5DK, Jeff VK5GF, Andy VK5LA and Peter VK5PJ have been pulled out of the noise.

The monthly Sunday evening scramble has not been well supported of late but maybe the warmer months will see an improvement.

Thanks for the update, Rob. The remainder of this month's column is once again filled with reports on activities in the microwave regions. If you would like to hear about happenings in the VHF/UHF region; I would be happy to print any news, provided that people submit it to me!

Microwave Activity Day Update

Doug VK4OE has sent in a photo of some potential candidates for microwave activities.

He writes:

This picture was taken during the recent Remembrance Day Contest (which was also the inaugural 'Microwave Activity Day'). Three fellows of the Sunshine Coast Amateur Radio Club in the club grounds near the Maroochy River are pictured during a QSO on 2.4 GHz from the Sunshine Coast location down to VK4OE who was portable on Mt Gravatt in Brisbane – an obstructed path of a hundred kilometres or so.

The particular significance of this picture is the sharing of the fun of operating microwave radio gear by one experienced amateur with others who are being introduced to this part of the fun of amateur radio! From left to right these operators are: Cec VK4FMOZ, Wayne VK4WS and Ches VK4WT (Ches normally pilots the planes we use for Aircraft Enhancement!)

Note what they termed an 'intelligent antenna aiming arrangement'! The challenge here was that the two fellows holding the antenna (Azimuth and Elevation controllers?) could not hear what the person operating the radio could hear on his headphones - every now and then a slight shift of the antenna led to a dramatic reduction in signal strength received at each end!

Thanks to Harvey Wickes VK4AHW for the photograph.

New VK4 24 GHz record

With the increase in microwave activity in the region, Doug VK4OE has been spurred on and reports on his efforts to further the 24 GHz record:

On Friday afternoon, 3 September 2010, VK4OE/4 at Springbrook Mountain (QG61ps on the NSW-Qld border) and VK4WS/4 at Howell's Knob (QG63je in the Sunshine Coast hinterland) completed a contact on 24.048 GHz, extending the Queensland distance record for this band to 170.1 km.

Equipment used was two 0.5 watt transverters (constructed by VK4OE), each feeding a 320 mm dia. prime focus dish.

Microwave activity manual rotator: Cec VK4FMOZ, Wayne VK4WS and Ches VK4WT making a contact on 2.4 GHz during the RD Contest.

The only DB6NT modules used were receive preamplifiers, one at each end.

On the same path, Wayne and I have previously worked each other on a variety of 'lower' microwave bands, always with huge signals. It was thus likely that, when the two 24 GHz transverters were completed, a contact over the same nearly-line-of-sight path should be relatively easy to compete. But due to the warm and medium-humidity afternoon, with rain clouds developing, we knew that it was not a sure thing. 24 GHz and atmospheric humidity are not compatible with long distance propagation!

After half an hour of calling and listening without a signal heard, we were about to give up when, following a new adjustment to Wayne's beam heading, I briefly heard an extremely weak signal, but for long enough to start to maximise his signal as received at my end. There was also QSB on the path. After that, we planned to complete the QSO using CW, but Wayne quickly discovered that his CW paddle's 6.5 mm plug was incompatible with the 3.5 mm key input on the IC-910 that was being used as a 'tuneable IF'. However, it followed that, after careful dish position optimisation and timing our calls with QSB peaks, signals were strong enough for an SSB contact to be completed. 5x1 and 4x1 reports were exchanged.

We count ourselves lucky to have completed the contact because the cloud was increasing and it had actually started to rain at my end. I relocated 30 metres to a point in the "Best-of-all Lookout" car park that is just across the geographical border into NSW, with a view to possibly also extending the 24 GHz distance record for VK2. Given the worsening weather, the half-hour delay involved in moving and setting up the gear again was enough to preclude success on this occasion. Signals were there, but ever so much weaker now than before.

The success of the afternoon was doubled because it revealed a significant improvement that could be made to the receive path of one of the transverters, which need could only have been identified under weak signal conditions. After that technical change is effected, more pushing of distances on 24 GHz will ensue - including fixing our sights on the Australian distance record for the band!

Microwaves are real radio fun – and with that we both agree, whatever the frequency!!!

New 47 GHz record

Further to last month's report on new 47 GHz band activity, Dan VK2GG reports that he has made some significant progress:

I have solved my deaf receiver problem on 47 GHz. A new Kuhne LO has solved the problem! It injects 40 mW - far more than the Elcom, and obviously less phase noise, or so it would seem.

I now have two equally good receivers - identical with Kuhne Mixer and LO in each. In fact yesterday (August 30th), we set a new Australian Record for 47 GHz of 58 km (LOS path - Gan Gan to Mt Sugarloaf)!!! It was a very weak signal, with fade and some noticeable drift, probably attributable to drift in the FT-817, as the transverters were locked on Rubidium at both ends. Humidity was about 51% - not bad for such a warm day as yesterday. Once dishes were locked at each end, we both had reasonable SSB copy, with terrible drift. Upon leaving the gear set, we tried again about 40 minutes later, with better results, but with humid NE winds expected in the afternoon, things were not going to improve. A great day out. Many thanks to Peter, VK2YGM, Jack VK2TRF, Les VK2APE, and Heather & Irene for the catering! Peter had a sling psychrometer to measure humidity at Mt Sugarloaf.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur VK7MO

A group in VK continues to test various new WSJT modes for Joe Taylor K1JT. While the new meteor scatter mode JTMS has been improved, its sensitivity is not quite as good as FSK441. However, as it is faster, it gets more data through on stronger pings. The end result is that all we can say is one or other mode works better in some situations and that it is difficult to draw a conclusion as to which is best overall. Testing has also started on a new EME mode called Diana (Diana is the Moon god). Diana gets to within 1 or 2 dB of JT65's Koetter-Vardy decoder (non-Deep Search decoder) but runs twice as fast in 30-second periods. Rather than use standard size messages, like JT65, Diana can use any free text and for shorter messages it can average the message more times. Thus short messages like CQ VK7MO give around a further 2 dB improvement compared to a longer message like VK3AXH VK7MO QE37. Joe Taylor proposes to add a facility to average over multiple periods (like the old JT44) to further enhance Diana. One significant downside with the present version of Diana is that, as it does not use a sync tone, it is difficult to detect on the waterfall. Still, it is the absence of a sync tone which wastes half the energy on JT65 that gives Diana the potential for a 3 dB performance improvement. It is still early days for Diana so the VK group will continue testing and hopefully Joe Taylor will come up with further enhancements. It is expected that by the time you read this article a public release version of WSJT 9 will be available for wider testing.

10 GHz Digital – Pointing in the right direction

One of the problems in working with very weak digital signals on 10 GHz is to be sure that you are beaming in the correct direction while waiting for an aircraft to cross the path or the troposcatter to rise out of the noise. The following program can be used to find the bearing of the other station or of a reference marker such as a building or squid pole that is at a known longitude and latitude:

http://reast.asn.au/2010/Great_Circle_Bearing.xls

It has been found that if one uses two GPS units such as the Garmin 60 handheld units (which allow averaging of data) and average the results for 15 minutes, one can get to within 0.5 degrees with a 200 metre baseline. A single GPS will achieve the same accuracy over a 500 metre baseline.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au

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VK2news

Gentlemen, start your handhelds!

Coffs Harbour and District Amateur Radio Club gets involved with the Coffs Coast Car Rally 2010

Eric Shaw VK2ES

The Coffs Coast Rally was held on 14-16 May 2010. The rally was held in the State Forests to the west and north west of Coffs Harbour and covered a distance of approximately 290 kilometres. Coffs Harbour and District Amateur Radio Club (CHADARC) was invited to provide radio communication for the start and finish and progress reporting for the various sections of the rally.

Preliminary runs were made into forests to check coverage from the Club's repeaters, located at Mount Moonbil and Mount Coramba, to the areas where the rally was scheduled to operate. These runs were carried out in the week prior to the Rally and showed good coverage in most areas except in the shadow of the high mountains and in the bottom of the gullies in some sections of the Rally course.

Our President Terry VK2TEZ was the contact person with the organisers and after much discussion we were allocated Saturday and Sunday for the section of the rally near Nana Glen.

CHADARC's responsibility was to set up communications between the field and the base which was located in the Coffs Harbour Show ground. Communication was carried out using our members' handheld and car mobile two metre radios via the CHARDAC repeater on 146.850 MHz. This repeater is located on Mount Coramba which overlooks the Rally location.

This communication consisted of advising the start time, finish time and the progress of the entrants through the various stages of the course along with reporting any accidents. This information went to the Rally organisers who entered it into their computers. This enabled them to track the location of each car and to organise search and rescue in the event of a car becoming Involved in an accident or breakdown.

Our base was set up at the Showground prior to the event scheduled commencement on Friday. It consisted of an Icom IC-22S two metre radio with mains power supply into an antenna mounted on the top of a squid pole and attached to the outside of the building we were using. This proved to be adequate.

The action started on Saturday morning at 0700 with Terry doing the rounds in the field allocating duties to our members who were participating. Two stages lasting for two hours each were run in our section on Saturday.

The members who participated on Saturday were Fred VK2FM, Ray VK2BRG, Ken VK2DGT, Pat VK2BPH, Arnold VK2ADA and Ian VK2NOT with Terry VK2TEZ at the base. Several others were down to assist but last minute emergencies prevented them from attending.

Sunday started similar to Saturday with Terry in the field organising duties. The morning session was only a relatively short one requiring two operators in the field. These were Darren VK2PDX ably assisted by Tracy VK2FTAM, and Jason VK2LAW ably assisted by Connie VK2FCON both from the Mid North Coast Amateur Radio Group. At the base was Eric VK2ES and when he returned from the field, Terry VK2TEZ.

The afternoon session was the same as Saturday and required more operators. These were Darren VK2PDX with Tracy VK2FTAM, Jason VK2LAW with Connie VK2FCON, Arnold VK2ADA, Fred VK2FM, and Ian VK2NOT, with Eric VK2ES and Terry VK2TEZ at the base.

A good time was had by all our members and the assistance from them and from the Mid North Coast Amateur Radio Group members was greatly appreciated.

Coffs Harbour and District Amateur Radio Club meets every Thursday at the Rex Hardaker Oval, on Hogbin Drive south of the University, between 1000 and 1400. Visitors are most welcome.

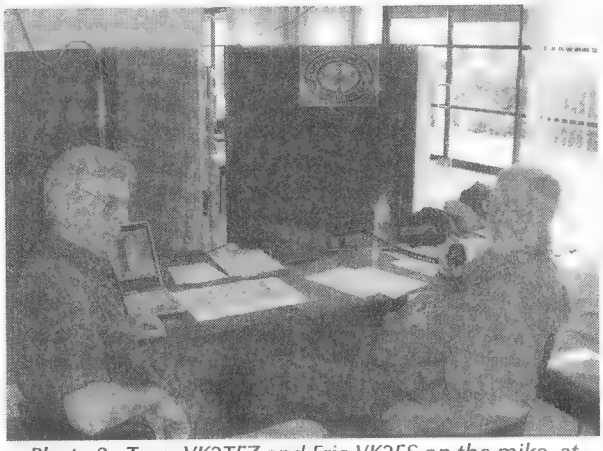

Photo 2: Terry VK2TEZ and Eric VK2ES on the mike, at the base in Coffs Harbour Show Ground.

Photo 1: Ken VK2DGT and his able helper, Robyn, set up at King's Ridge in the Lower Bucca State Forrest.

AMSAT

David Giles VK5DG
vk5dg@amsat.org

25th AMSAT-UK Colloquium

On the weekend of 31 July and 1 August, AMSAT-UK held their 25th annual colloquium near the University of Surrey. There were many presentations and demonstrations pertaining to satellites. Most are available for view from the BATC website (1). Here is a report on some presentations.

FunCube

Members of AMSAT-UK gave two talks on the FunCube mission (2). Jim Heck G3WGM started with the initial proposals made one year ago and gave a detailed report on the progress made since. FunCube will be a 1U sized cubesat with a linear 70 cm to 2 m transponder. The mission has a strong educational outreach program which will feature a materials science experiment.

Wouter Weggelaar PA3WEG talked on the RF board design. He was part of the Delfi-C3 (DO-64) team and the FunCube RF system is based on the DO-64 design. The 435 MHz receiver has two IF stages at 70 MHz and 10.7 MHz with a bandwidth of 20 kHz. The command receiver uses FM while the transponder is linear. The transmitter uses a single conversion from 10.7 MHz to 145 MHz. Telemetry is sent using 1200 baud BPSK. Learning from AO-16 the transponder can be put into 'loopback' mode with the FM receiver connected to the balanced modulator for a double sideband transmitter.

David Bowman G0MRF spoke on the separate RF power board. The amplifier uses a single FET biased to mode AB1 and produces up to 500 mW from a 6-8.2 volt supply. Using a separate board improves thermal stability of the satellite. The board has filtering to reject third harmonics on 70 cm and sensors for current, RF power and temperature. One bonus measurement will be monitoring changes in the bias for the FET due to radiation damage. AO-40 used large FETs as radiation sensors as part of the CEDEX experiment.

Michael Castle G1ZVN spoke about the 'almost no on-board computer'. The command control and telemetry board is made up of two chips: a low power 8-bit microcontroller and a CPLD (Complex Programmable Logic Device). The microcontroller takes care of the telemetry and cannot be reprogrammed once in space. The CPLD does all the interfacing between the microcontroller and the sensors as well as handling the operational functions of the satellite. The CPLD is just a programmable chip that replaces a large amount of discrete logic and is less affected by radiation than the microcontroller and in the event of the microcontroller dying, the CPLD can run the cubesat with just the transponder activated.

Dave Johnson G4DPZ detailed the proposed ground station software. There will be similarities with the RASCAL ground station program developed for DO-64. It will capture telemetry and send it to the command stations for storage and analysis. Unlike RASCAL the telemetry can be made public for use by schools. Much of the software design has been made to integrate with the computers used in the British education system and conform to their regulations.

Part two of the FunCube talk was given by Howard Long G6LVB. He demonstrated the ground station receiver prototype. As FunCube is primarily an educational mission, a simple plug-and-play ground station that is easy to use by teachers is needed. Howard demonstrated a USB 'dongle' that plugs into any modern computer. It consists of a 2 m ¼ wave whip antenna, a wideband television receiver chip, CODEC chip and USB soundcard chip. To the computer it just looks like three fairly standard chips so no special drivers are needed. The receiver wins no prizes for selectivity as it can receive from 65 to 1700 MHz. No input filtering has been put in. Total cost of components is around 10 pounds, the labour cost is not yet determined. Howard demonstrated the prototype showing how easy it is to use.

FunCube was started from a substantial bequest to AMSAT-UK. There are enough funds to design and build the satellite but extra money will be needed to launch. Also, teachers are needed to plan school lessons and operation guides. The operation schedule is expected to be based on two modes— the high power telemetry mode on during daylight hours on schooldays; the amateur transponder and low power telemetry on during darkness and on weekends. The telemetry will be made up of real-time data, whole orbit data and 'fitter' messages. These messages can be news bulletins, messages to or from amateurs etc.

SA-AMSAT

The presentation I found interesting was not about a satellite at all. Hans van de Groenendaal ZS6AKV gave a two part talk about the new SA-AMSAT cubesat and a balloon project called Lalela (3), (4).

The Lalela (Zulu word for 'listen') mission's aim is to fly a hydrogen filled balloon around the world at an altitude of 22 km. It is the brainchild of John Willescroft ZS6EF. It is hoped the mission will last around 600 days. The balloon will transmit SSB voice telemetry on a HF band with a transmitter power between 100 mW and 1 W. The transmitter design will be used in the upcoming SA-AMSAT cubesat project. There are going to be five balloons in the series. So far three test flights of prototypes have been made. The biggest problem identified so far has been poor antenna performance. An automatic antenna tuner has now been incorporated. The balloon itself is made from polyester coated with aluminium on the inside and gold on the outside and stands 1.67 m tall. Three weather balloons are attached to the top to lift it to an altitude of 9 km before being released. The base of the balloon has the electronics and a five-bladed turbine for electrical power and to generate hydrogen. The electronics consists of a lithium-ion battery, microprocessor, GPS receiver, SSB transmitter, batteries, temperature and pressure sensors and a command receiver. The sole job of the command receiver is that in the event of the transmitter malfunctioning, the command station can order the balloon to self-destruct. They do not intend on using it. The entire payload is in a 40 mm round package and the whole balloon has a mass of a mere 243 grams. Transmissions have been tested on 20 m but better results were obtained from 40 m and 14 m. The antenna is a wire under the payload housing.

SA-AMSAT announced that it was building a cubesat and called for payload ideas. A competition was held to name the cubesat. Some of the entries had been given in Zulu through an Internet translator which came up with interesting but not useful results. According to the SA-AMSAT website a name has not been selected. Also a payload has not been finalised. They would like to fly two payloads—one for the radio amateur community and one with an educational outreach. Plans are for a 30 kHz wide linear transponder and a receiver to measure HF noise pollution over southern Africa linked to GPS data. Part of the mission is to involve a non-technical team that would do such jobs as administration, fund-raising, organise teleconferences and education outreach to schools.

Other Talks

Michael Castle G1ZVN spoke on STEM-Science Technology Engineering Maths. STEM's aim is to enthuse the next generation of engineers and scientists. FunCube is a part of this larger project. But the emphasis of the talk was the need for material to give to teachers so they can quickly and easily use FunCube. AMSAT are planning to hold a booth at a science teacher's exposition in January 2011.

William Leijenaar PE1RAH demonstrated his tiny UV linear transponder for cubesats. It is a complete transponder with 200 mW output and CW beacon that is only 70 mm square.

Cubesats were not the only subjects for discussion. Some real rocket science was discussed from the Surrey Space Centre. Tom Harle's talk on Scaled helicon double layer thrusters was about a new development in ion thrusters for small satellites they were working on. Using RF power to ionise argon atoms for high speed but low density thrusters, these would move satellites less than 500 kg for long term or interplanetary missions. Lourns Visagie outlined an upcoming solar sail mission from the Surrey Space centre. The cubesail nano-satellite project is for a small satellite mission that will use sunlight for propulsion. Peter Guelzow DB2OS gave an update of AMSAT-DL activities in the past year focussing on P3E/P5A. Similarly Barry Baines WD4ASW gave a report from AMSAT-NA. Ivo Klinkert PA1IVO outlined methods of determining the orbits of satellites using ground station reception reports as part of the upcoming GENSO project. GENSO will be an international ground station network made up of universities and radio amateurs.

Murray Niman G6JYB gave a talk on proposed changes to satellite bands, with emphasis on securing a small section of 6 m for satellite use. He mentioned getting the 9 cm band for satellite use in Region 1 and more use of the 23 cm band.

Final Pass

Satellite hardware and ground station software, ion-drives and solar sails, low earth orbit and interpanetary missions; the AMSAT-UK colloquium had a wide range of subjects to give an idea of the diversity of this facet of amateur radio.

References

(1) The BATC website is at www.batc.tv You can follow the link from the front page of the AMSAT-UK website at www.uk.amsat.org Click on the film archive button and select the video stream.

(2) http://www.funcube.co.uk/WP3/

(3) http://www.amsatsa.org.za/

(4) http://www.eepublishers.co.za/view.php?sid=22107

AMSAT-VK

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Website

www.amsat-vk.org

Group site:

group.amsat-vk.org

About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.

AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net

Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales

VK2RMP Maddens Plains repeater:146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland

VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

In South Australia

VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, Echolink node 399996

In Tasmania

VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz. IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night.

Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

WIA Centenary Award

A limited issue operating award is available to celebrate the 100th year of the Wireless Institute of Australia (WIA), the world's oldest national radio society.

To qualify for an award contact is required with the Centenary of Organised Amateur Radio in Australia special event station VK100WIA. A distinctive QSL will be available.

The WIA, through its affiliated radio clubs, will operate this unique callsign from 1 May to 31 October 2010. The callsign was used in Canberra, at the WIA Annual General Meeting and associated events on 28-30 May.

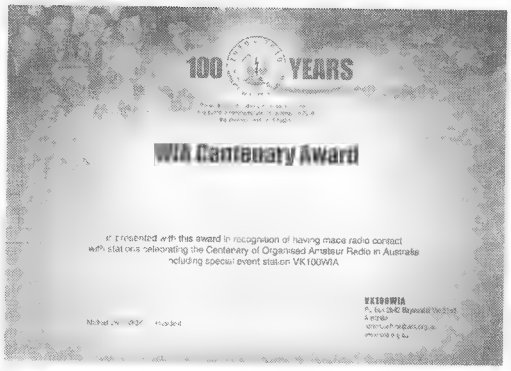
It will be on all amateur bands available to VK radio amateurs including the popular HF bands.

The award rules are: Those radio amateurs outside Australia need to achieve 50 points while VK hams require 100 points.

A contact with VK100WIA operated by the WIA or a Club is worth 10 points (only one contact with VK100WIA operated by the WIA and only one contact with each Club) and there must be a minimum of two contacts with VK100WIA.

Contacting any WIA member between 1st May 2010 and 31 October 2010 is worth five points (Example: working VK100WIA at 10 different Clubs would be eligible for the award. Working 16 WIA members gives 80 points but then two contacts must be made with VK100WIA).

Any mode may be used; cross-mode and cross-band contacts are permitted. Satellites and repeater



contacts are permitted. Send AU$5 or 3 IRCs and a list of contacts (QSLs not required) to the Awards Manager WIA Centenary Award, PO Box 2042, BAYSWATER VIC 3153 AUSTRALIA.

Listen around the bands or visit the WIA website www.wia.org.au for frequent updates of the operator club's roster. **ar**

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Quality soldering wire, manufactured by Kester, 0.5 kg, $30.
Hy-Gain RF-550A RF power meter and antenna switch, four antennae selection, 400 W and 4000 W power range meter. External case rusty, unit fully operational, $100.
Ameritron screwdriver antenna controler SDC-100, $140.
Tom VK2OE, 3 Buller Street, Bonalbo, NSW. 2469.
Email wojiech.tomczyk@det.nsw.edu.au

WANTED – NSW

Carbon elements for the standard size Scope soldering iron.
Neville Chivers VK2YO, QTHR or phone 02 6674 2095.

HELP WANTED to finish building my VK5JST aerial analyser kit. Surgery has left me visually impaired to the extent that I can no longer work on the PCB and the rest of the project. I am happy to meet all costs of an experienced kit builder.
Contact John Bennett VK2SIG/VK3ZA on email macben2@bigpond.com

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Hy-Gain 204BA 4 element monobander beam for 20 metres.
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Contact John VK3GF QTHR. jcwbl@westvic.com.au or phone 03 5562 5545.

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Icom IC-746 transceiver, HF, 6 m and 2 m. Sn 0025110, very little use. Like new, complete with manual, hand mike and an extra desk microphone, the ICMS-6, which has a PT switch and an adjustable pre-amp. Peter VK4PO QTHR. Phone 07 3390 1129 or mobile 0417 785 677

WANTED - QLD

Cassette tapes, with Morse code, from about 8 wpm to 20 wpm. Must be in good order. They are required for instructional purposes.
Reply to vk4dv@yahoo.com.au or phone 07 4928 5537, at night only.

FOR SALE – SA

'Oscar's Ham Radio Adventure'. A short book written for children and teenagers but suitable for people of all ages. Details at www.vk5sw.com or $20.00 delivery included. Rob VK5SW, 6 The Parkway, Paradise. SA. 5075.

Beat the pending price rise.VK5JST Antenna Analyser kits still available. See AR article December, 2009. Postage and parts increase costs will soon mean a price rise. For more details see www.scarc.org.au; contact SCARC, PO Box 333, Morphett Vale. SA. 5162, or email: kits@scarc.org.au

Repeater Over Timer. Lets you know when you have been talking long enough on the repeater. See November 2009 issue of AR magazine. Complete kit of parts with instructions, last few kits to clear. $20 each, including postage. Also available built and tested $25 including P&P from Elizabeth Amateur Radio Club. See http://www.earc.org.au/articles/2009/05/repeater-over-timer/ or email vk5oq@earc.org.au

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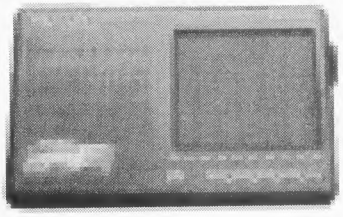

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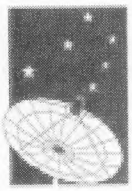

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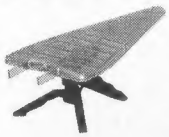

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ILLW International Lighthouse and Lightship Weekend — photo log

The IILW weekend of radio activity (this year 21-22 August) grows in popularity each year. As a non-competitive event the contacts are generally more 'chatty' and the magnificent and often remote locations make for a great weekend away. Or perhaps like the Timeball at Williamstown VIC, North Mole at Fremantle WA and Barrenjoey in suburban Sydney, they are not so remote.

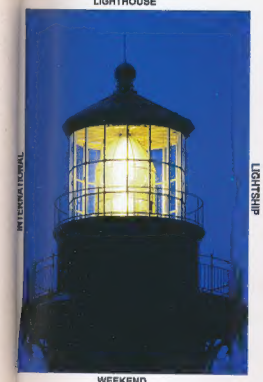
Many early reports are in this issue, either as part of club notes or as stand-alone reports. On this and the facing page are some photographs that caught the editorial eye.

The photo on this page is of Tablelands Radio & Electronics Club (TREC), based at Atherton, which trekked some 300 km to Archer Point in Far North Queensland (Full story on page 29 Big Sky country.

At the top of the facing page members of the Gippsland Gate Electronics and Radio Club did a much shorter but harder trek on foot as they backpacked their station more than 18 km over the only access, a bush track, into the Wilsons Promontory lighthouse, which is almost at the southern-most point on mainland Australia. That is ALARA member Pat VK3OZ in the lead. Full story in the ALARA notes on page 39

Stuy VK7ZM and his two sons camped at Rocky Cape lighthouse on the NW Coast of VK7. Their set up with the 'Landy' as shown was pretty straightforward on the only two days of sunshine in weeks of rain. Their story in the VK7 notes on page15.

Again in VK7 VK7WCN - WICEN Tasmania (South) Inc. went to Point Home Lookout light near Triabunna on Tasmania's East Coast. Looking from the light over Mercury Passage andunder the rainbow to Maria Island made for a truly atmospheric shot. Full story on page 28.



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Some did it the hard way, some did it the easy way, and for some it was just breathtakingly magnificent.

(captions on facing page.)

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